Chemical Week

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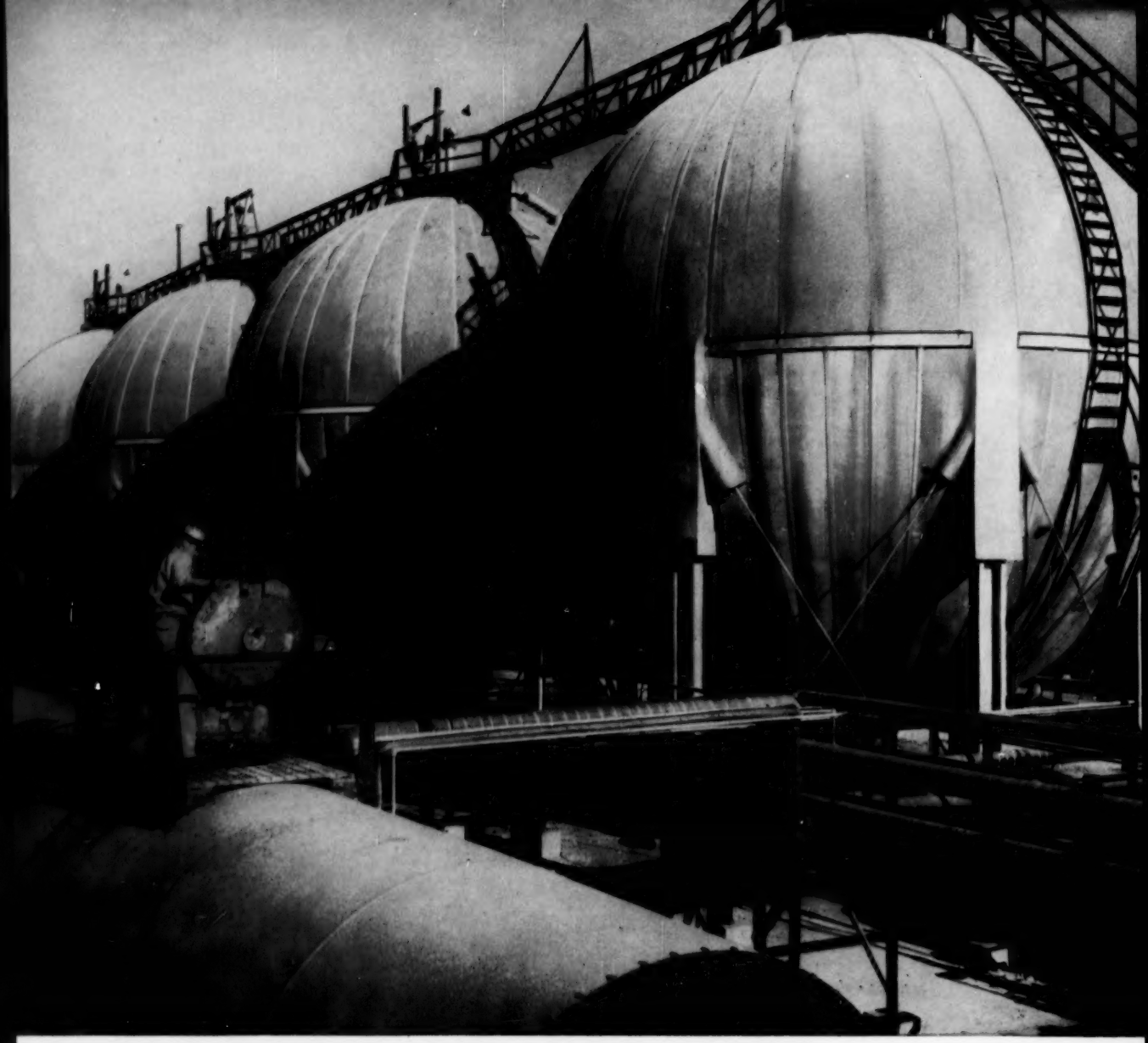

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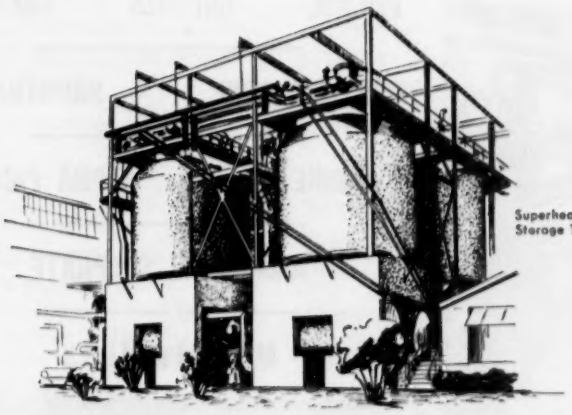

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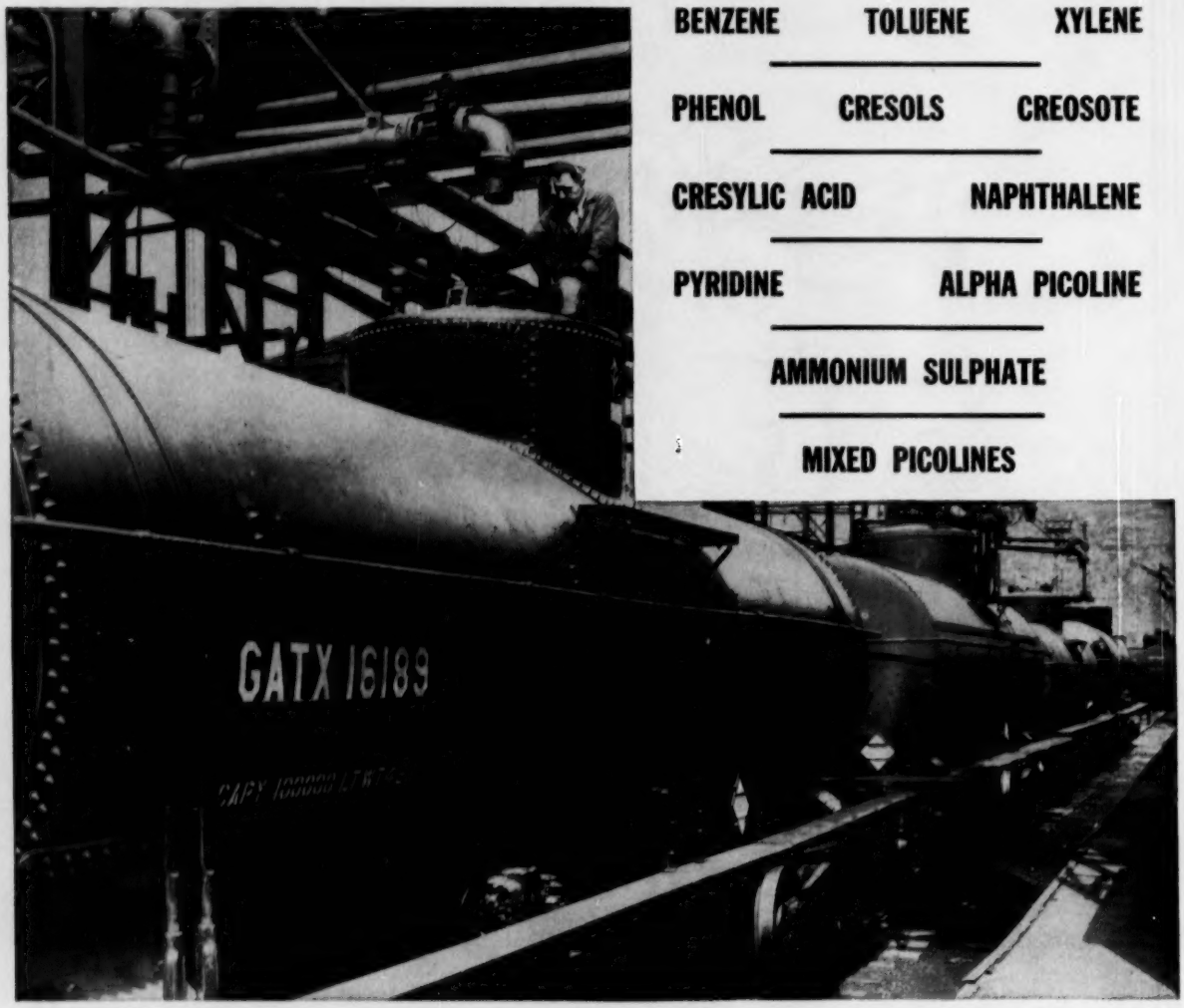

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Chemical Week

Volume 76 | February 12, 1955 | Number 7

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OPINION . . . . . .

Teller Rejoinder

TO THE EDITOR: I should like to take this opportunity to answer Mr. Prahl's letter (*Jan. 15*).

I have great regard for the work of Prahl in his application of a modified Deacon process. I also have great regard for the 16 other inventors who patented catalysts before and after Prahl.

My work concerned itself with the development of a catalyst that has a long life and high efficiency. Prior catalysts only had one or the other of these attributes, a factor which has prohibited general industrial application of the Raschig or modified Deacon process.

The dispersed copper oxide (prepared from an organic copper salt) on alumina has the attributes of higher hydrocarbon conversion than the Prahl or Mares catalysts, lower air dilution requirements, and the ability to be regenerated, thus leading to smaller reactor units and lower investment and operating cost.

These factors, we believe, combined with the lower catalyst cost, make the process economically attractive.

There was no attempt to belittle the work of Mr. Prahl. We believe he made a contribution in dispersing the copper chloride on a carrier. We also believe we made a contribution in creating a discontinuous surface catalyst on the carrier and one which can be regenerated . . .

A. J. TELLER
Chairman, Chem. Eng.
and Chem. Depts.
Fenn College
Cleveland, O.

Drug Prices

TO THE EDITOR: Re your editorial on prescription prices *(Jan. 8)* I do feel that we are possibly talking too much about high price prescriptions that are still a very small percentage of the total in most of the 22 areas where we are operating prescriptions surveys. From 55% to 75% of the prescriptions will run $2 or less. In 1953 our national model price for prescriptions was $1.25. Prescriptions over $6 rarely exceed 3.5% and some areas are as low as 1.7%. Our average price for the first six months of last year was $2.30.

While $10 and $15 presoriptions do appear, they are very rare and usually can be accounted for by a much larger amount of the drug being prescribed than would ordinarily be dispensed for the illness of one patient. . .

We also figure out average prices on all currently used preparations and I can only recall in the past year one that had a higher average price than $5. It was a new antibiotic, the average price being $5.05.

As to the profit of the pharmacist, we have made a great many spot checks and have invariably reached a figure within 1% or 2% of 50% gross profit.

Our studies have shown that while there are some prescriptions priced with a high percentage of gross profit, these are offset by a corresponding number that carry less than 50% gross profit.

D. D. Stiles
Director of Market Development
Abbott Laboratories
North Chicago, Ill.

Naming Phosphates

TO THE EDITOR: Hats off to my friend H. L. Morrill for his letter correcting your nomenclature of organic phosphorus compounds *(Jan. 15)*. Some of us who have spent the last four or five years trying to straighten out the nomenclature of these complex compounds resent your answer to Mr. Morrill.

I enclose a copy of the official report of the ACS Nomenclature, Spelling and Pronunciation Committee for 1952. This system is completely unambiguous and has been universally accepted by workers in both government and industry. . .

RUSSELL J. ROWLETT, JR.
Patents and Information Services
Virginia-Carolina Chemical Corp.
Richmond, Va.

Our comment appended to Mr. Morrill's letter was not intended to be disputatious—nor, indeed, do we think it was. We agreed that Mr. Morrill had raised a good point; we also pointed out, however, that because Chemical Abstracts changed its nomenclature system in 1952, many references antedating that time are now "incorrect."—ED.

No Buckets Needed

TO THE EDITOR: Sometimes typographical mistakes are humorous—but occasionally the humor is apparent only to a limited few.

Our associates, Mobay Chemical Co., are working valiantly to put "onstream" an isocyanate plant at New Martinsville, W. Va. Its announced capacity—"several hundred tons a month." Your Jan. 1 roundup of expansions changed the all-important word "tons" to "lbs."

As a result, production people in Monsanto are offering their Mobay-cousins "some old buckets we have lying about in which to make this for you—it'll save you all the fuss and muss."

JAMES G. ZACK
Monsanto Chemical Co.
St. Louis Mo.

Sorry. Incidentally, the typo is particularly irksome to us, too, because CW *was first to predict—several months ago—what Mobay's capacity would be—and in tons.*—ED.

DATES AHEAD . . .

Chemical Institute of Canada, protective coatings division conference, Royal York hotel, Toronto, Feb. 24; Ritz Carlton hotel, Montreal, Feb. 25.

Drug, Chemical and Allied Trades section of the N.Y. Board of Trade, annual dinner, Waldorf-Astoria hotel, New York, March 3.

Fourth Annual Water Symposium, Louisiana State University, Baton Rouge, March 22-23.

National Farm Chemurgic Council, annual chemurgic conference, Deshler-Hilton hotel, Columbus, O., March 22-24.

National Industrial Conference Board, marketing conference, Shamrock hotel, Houston, March 24.

World Plastics Fair and Trade Exposition, National Guard Armory, Los Angeles, April 6-10.

CW welcomes expressions of opinion from readers. The only requirements: that they be pertinent, as brief as possible.

Address all correspondence to: W. A. Jordan, Chemical Week, 330 W. 42nd St., New York 36, N. Y.

FINANCIAL AID TO HIGHER EDUCATION

Business Aid for Our Colleges—Voluntary or Involuntary?

Previous editorials in this series have shown that:

- As a group the nation's independent, privately endowed colleges and universities are in grave financial trouble, and
- There are many different means by which business firms can extend a helping hand to these institutions.

This editorial, one of a series devoted to the financial problems of higher education, submits this proposition: **If business firms do not voluntarily go to the financial aid of higher education, there is every prospect that they will soon be providing more financial support for higher education involuntarily, through taxation.**

If this prospect materializes, one of the basic elements of a well-balanced system of higher education—a strong array of independent colleges and universities—may well be dangerously weakened if not destroyed. And in the process a potentially crucial bulwark for freedom of enterprise in the United States—that same strong array of independent colleges and universities—will be undermined.

Acceptance of these propositions implies absolutely no disparagement of tax-supported colleges and universities. These have an indispensable role in the total system of higher education in the United States. Leaders of these institutions would be among the first to agree that their position is strengthened by a strong system of independent institutions, supported privately rather than by political agencies.

What is the evidence that in one way or another, voluntarily or involuntarily, business will be giving more financial support to higher education? One impressive part of this evidence is provided by the recent rapid increase in the proportion of college and university students attending tax-supported institutions.

Rapid Shift in Enrollment

In the fall of 1952 tax-supported colleges and universities enrolled about 7.5 per cent more students than the independent institutions. In 1953 this percentage was doubled. And in 1954 the tax-supported institutions enrolled 26 per cent more students.

In the case of students entering college for the first time the relative growth of the tax-supported institutions recently has been even more striking. In 1952, the number of beginning students in the tax-supported schools, as reported by the U. S. Office of Education, exceeded those in the independent colleges and universities by 35 per cent. In 1954, just two years later, this figure jumped to 49 per cent.

Why has the proportion of students attending tax-supported colleges and universities been in-

creasing so rapidly? There are many reasons. But a dominant reason is that, in order to keep going at all, the independent institutions have been forced to make large increases in the prices they charge for instruction. The purchasing power of their endowment funds has been cut in half by price inflation. The capacity of the wealthy to supplement their endowments by gifts, as they have done in the past, has been greatly reduced by high taxes. As a result these schools have been forced to rely increasingly on higher prices for instruction (tuition as it is called in academic circles) to make both ends meet.

Since 1940, the independent colleges and universities have raised their tuition fees by an average of about 60 per cent. This is considerably less than the increase of about 100 per cent in prices generally since 1940. And it is nowhere near enough to prevent the faculty members of the independent colleges from faring miserably in terms of salaries, a matter of major national importance to which we shall return in this series. But the increase in tuition fees of the independent colleges has been much greater than the increase in the fees charged by the tax-supported schools. And that price differential increasingly tends to shunt students into the schools which are supported chiefly by taxes. Independent colleges now charge, on the average, about $580 per year for a full course of instruction while the tax-supported institutions charge, on the average, about $240.

Bigger Tax Bill in Prospect

A large increase in the total enrollment in our colleges and universities during the next decade is in prospect, particularly when the great increase in births during World War II is reflected in the number of young men and women of college age. With a total of 2.5 million students at present enrolled in our institutions of higher learning, it is estimated that the total will be over 3 million by 1960.

If this trend continues most of the anticipated increase in college and university enrollment will be concentrated in tax-supported institutions. Indeed, if the shift toward tax-supported institutions that has occurred in the last three years were to continue over the next six years at the same rate, about two million of the three million students anticipated in 1960 would be in tax-supported colleges and universities and one million in independent schools. In 1950 there was a 50-50 division in enrollment. This shift would mean, of course, a corresponding increase in the tax bill for tax-supported education. And of this bill, we can be sure that an ample share would be assessed against business firms.

No Easy Solution

The best way, of course, to put a brake on a soaring tax bill for higher education is to help the independent institutions get in shape financially to carry a larger share of the student load. For most companies the development of a mutually satisfactory program of financial aid for higher education is a complicated process. In fact, it is so complicated that some companies with an initial disposition to provide financial help are inclined to despair of working out a mutually constructive plan.

If, however, the leaders of business will contemplate seriously the only available alternative to their extending voluntary help to our independent colleges and universities, their determination to work out a plan will be strengthened. For that alternative involves a grave weakening of our system of higher education, together with an involuntary increase in the financial support of higher education by business. The increase would come through higher taxes. Contemplation of such an alternative should, if necessary, toughen the will of business firms generally to do everything possible to extend financial help to our independent colleges and universities.

This message is one of a series prepared by the McGraw-Hill Department of Economics to help increase public knowledge and understanding of important nationwide developments that are of particular concern to the business and professional community served by our industrial and technical publications.

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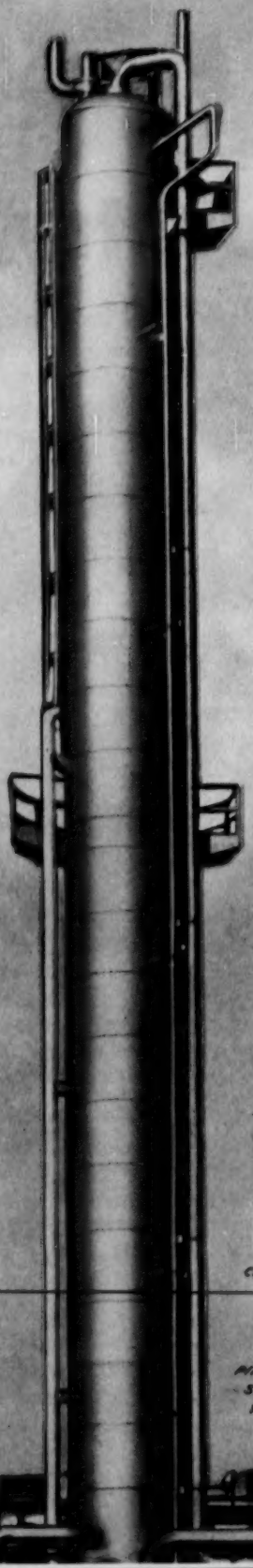

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NEWSLETTER

Financial circles were surprised late last week when Du Pont decided to exercise its rights as a stockholder to buy an additional million shares of General Motors stock. Coincidentally, the decision was reached the same day the Justice Dept. decided to appeal the Du Pont-GM antitrust decision (*see. p. 13*).

The additional purchase—part of a 4,385,000-share offering—won't change the 22.6% proportion of GM stock owned by Du Pont.

•

Are uniform prices evidence of conspiracy to violate antitrust laws? That's the question the Texas Supreme Court will consider next month when it reviews the state's case against 10 oil companies.

The suit, brought in 1949, has never been tried, pending various appeals challenging the sufficiency of the state's evidence. Last October the court refused to review a lower court's decision that the state had sufficient cause for action to bring trial. Hence last week's decision is a minor victory for the defendants.

•

Texas never tires of trying to tax natural gas. In the state legislature, Rep. Curtis Ford has introduced three bills designed to replace legislation declared unconstitutional by the U. S. Supreme Court. They aim to: (1) levy a production tax of 1½¢ per 1000 cf., replacing the present tax based on a percentage of market value; (2) require the producer to pass the tax on to the purchaser when the selling price is less than 10¢ per 1000 cf.—the controversial "gathering tax" aimed at pipelines; (3) if that's unconstitutional, declare it economically wasteful for the producer to sell his gas for less than 12¢ per 1000 cf.—establishing in essence a minimum price.

•

You can jot down six fast tax write-off certificates on research and development facilities, plus one for rutile. Hobart Bros. Co. (Winter Beach, Fla.) got a 65% write-off on rutile production. The research certificates:

- Ethyl Corp., 40% on a $650,000 lab at Ferndale, Mich.; 40% on a $450,000 facility at Baton Rouge, La.
- Monsanto's Organic Chemical Division (St. Louis, Mo.) $372,850 at 45%.
- Shawinigan Resins (Springfield, Mass.) $279,580 at 45%.
- Experiment, Inc. (Richmond, Va.) $92,800 at 45%.
- Catalyst Research Corp. (Baltimore) $40,000 at 45%.

•

Several new products are either on stage or in the wings:

- A. R. Maas Chemical (South Gate, Calif.) is test-marketing organic chelating agents based on ethylenediamine tetraacetic acid made by a new process. It's a departure for Maas, which has been primarily a maker of inorganic phosphates.
- Montrose Chemical (Newark, N. J.) large DDT manufacturer, is pilot-planting DDVP (dimethyl dichlorovinyl phosphate), a new insecticide developed by the U. S. Public Health Service. Its strong points: high potency; effectiveness against DDT-immune insect pests; relatively high

volatility, permitting its use on crops. Still under study: its toxicity to mammals.

•

Smog has a court of its own in Los Angeles. The presiding municipal court judge has set up a special court to handle smog cases, following complaints by the county board of supervisors that cases were being delayed and that some judges were granting an excessive number—in their opinion—of continuances to industrial defendants cited by the Air Pollution Control District.

•

Tacoma, too, is toughening its stand. It has revised its air pollution ordinance to require that industrial and commercial firms secure operating licenses by July 1 from the city's smoke abatement engineer. A board of five "qualified citizens" will be selected to consider appeals from the engineer's decisions.

•

Union Oil of California is betting $5 million on shale oil. That's the cost of a pilot project it has just started that is expected ultimately to permit commercial development of some 5 billion bbls. of shale oil reserves (eight times Union's current proved reserves) on 50,000 acres of company-owned land near Rifle, Colo.

The project calls for construction of a 1000-tons/day shale processing retort, which, together with other researches, will yield cost and processing data and information for design of a complete plant—from shale mining to oil refining.

•

Texaco, too, is optimistic about shale oil. The firm's L. C. Kemp, Jr., told the Colorado Mining Assn. last week that competitive research by various oil companies is the best and fastest way to solve cost and quality problems. Texas Co. has shale oil research under way.

Kemp doesn't see shale oil as a stand-by reserve in case of war: it's now too costly, and accelerated crude oil production could fill the gap. Oil shale won't be used until it can be exploited commercially at a profit.

•

Battelle Institute has awarded a design, engineering and construction contract to American Machine & Foundry for a half-million-dollar nuclear reactor. Of the so-called "swimming-pool" type, it will provide an intense source of neutrons and radiation, supplementing a cobalt-60 gamma radiation source and other facilities now being installed at Battelle's $1.5-million atomic research center near Columbus, O.

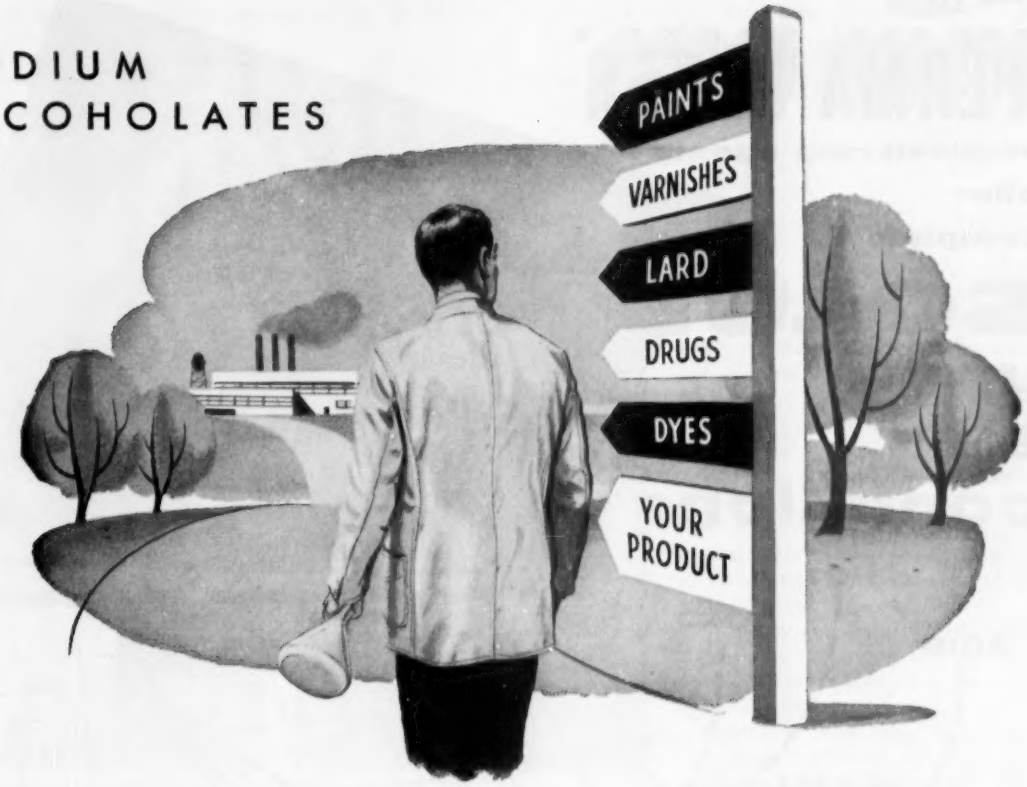
Expected to go onstream next February, the 1000-kw. reactor will use U-235 fuel, will be used for atomic power studies to study radiation-activated chemical reactions, to provide radioisotopes for tracer experiments, and to study the effect of radiation on materials of construction for atomic power plants.

•

Further fuel for the fluoridation fire is a report from the School of Dentistry at the University of Indiana on clinical tests with a fluoride-containing toothpaste. A 50% lower decay rate was observed among 214 children aged 5 to 15 as compared with 209 children using a nonfluoridated dentifrice. The American Dental Assn. calls the study "promising," hopes that "commercial interests will not jump the gun as they have done so frequently in the past . . ."

. . . The Editors

SODIUM
ALCOHOLATES



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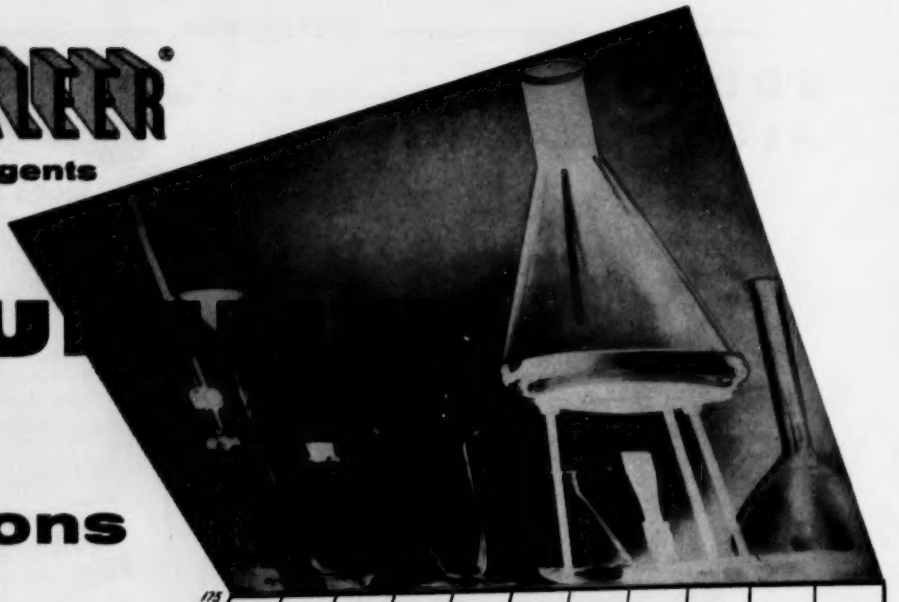

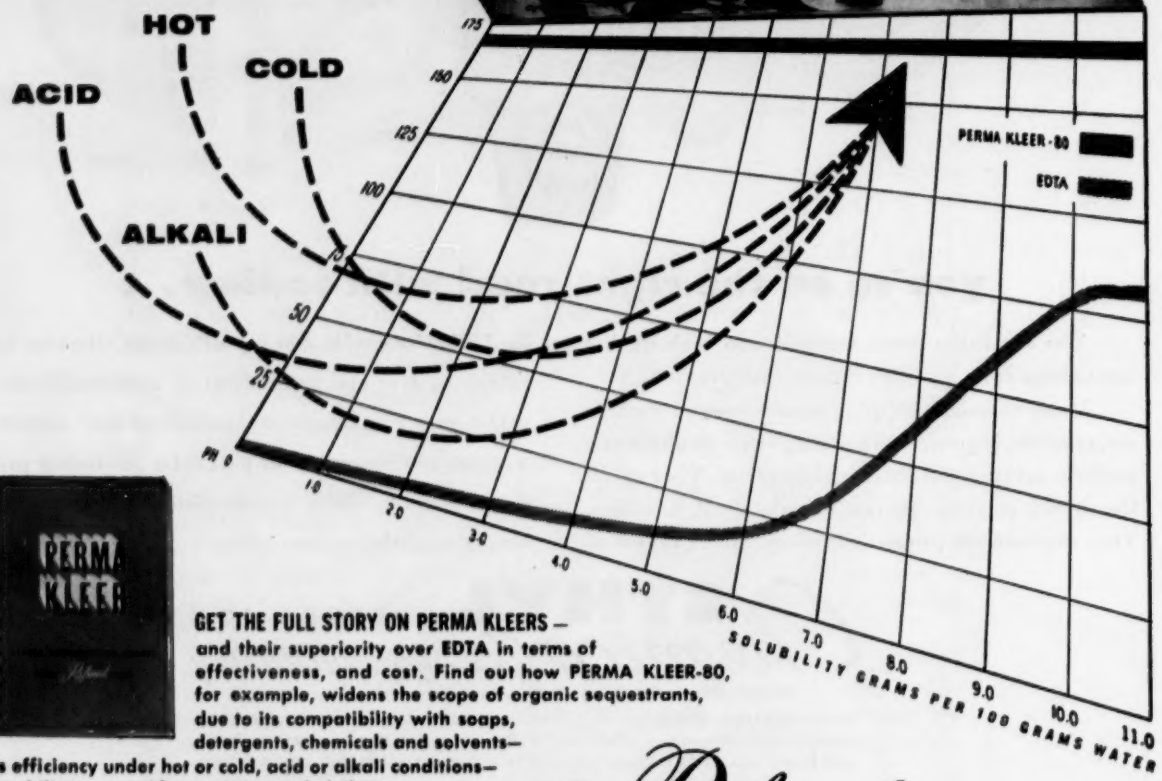

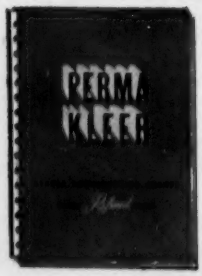

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BUSINESS & INDUSTRY . . .

ANTITRUSTER BARNES, DU PONT'S GREENEWALT: Still another court clash.

New Hurdle on Old Course

Still another hurdle was suddenly raised last week in the 12-year "obstacle course" of antitrust litigation that the country's largest chemical company—Du Pont—thought it had virtually completed last December when it won a clean bill of health in the General Motors lawsuit at Chicago (CW, Dec. 11, '54, p. 13).

Abruptly, the Justice Dept.'s Antitrust Division said that it will go before the U.S. Supreme Court in an attempt to upset the trial court's decision to dismiss the government's charges.

Du Pont's reaction, through President Crawford Greenewalt, was not only surprise but also disappointment. Thousands and thousands of dollars have already been spent in lawyers' fees fighting the suit.

Shortly after the department announced its decision to appeal, Greenewalt said he had hoped the "clear cut vindication" of his company would have convinced the department that no further litigation is needed.

Rubber Charges Dropped: But working a legal twist into an old baseball maxim, the antitrusters proved again that no case is over until the last appeal is thrown out.

The government's appeal will center only on that part of its case dealing with relations between Du Pont and General Motors—which says tacitly that the Justice Dept. now concedes that it didn't have much of a case against U.S. Rubber Co., the third major company originally involved.

The government's case charges the Du Pont company and members of the Du Pont family with conspiracy, monopoly, and restraint of trade. On the appeal, the government will argue that its evidence proves Du Pont defendants followed a pattern aimed at (1) controlling the management and policies of Du Pont and GM; (2) protecting markets for some Du Pont products and excluding competitive suppliers from GM; (3) reserving certain production fields exclusively for Du Pont.

Early Clearance Possible: Thus the Supreme Court can decide this term—probably late spring—whether to hear the government's appeal. If it decides not to, that would put an end to the matter and clear Du Pont.

If it does take jurisdiction, the legal briefs on both sides would be filed, but oral arguments probably would not be heard until the middle or latter part of the court's next term—about next winter.

Early last December when District Court Judge Walter La Buy at Chicago dismissed the antitrust charges leveled against the three big firms, all signs indicated this was the end of the long litigation begun in 1949.

Main reason: the apparently airtight ruling by La Buy that the government's evidence failed to prove the antitrust violations charged.

Political Factors Seen: Aside from the obvious difficulty in reversing a judge on his conclusions on facts, political considerations seemingly were on the side of no appeal. The Du Pont case, filed by the anti-big business Democrats, carries a brand applied by some critics as a "mere attack on size."

But Republican antitrusters have taken a page from the Democrats before. While they may not harbor the feeling that "bigness" is bad, the decision to appeal indicates that Attorney General Herbert Brownell and Antitrust chief Stanley Barnes think La Buy was wrong, and wrong enough to make an appeal worthwhile.

Antitrust spokesmen indicated at the time of La Buy's ruling that losing the Du Pont case would not really affect future antitrust case policy.

The appeal creates an ironic situation on the Supreme Court bench: of the nine men in whose hands the fate of the case now rests, two played leading roles on opposite sides in the case. Tom Clark filed it for the Justice Dept. as Attorney General; John Harlan—as yet not confirmed for his seat on the court—headed Du Pont's staff of defense lawyers during the trial. Both men will remove themselves now from any participation in the court's handling of the case.

(See also next page: Congressional merger probes launched.)

WORLD WIDE PHOTOS

KEFAUVER, CELLER, MAGNUSON: Big guns in the coming Democratic attack on merger and monopoly.

Antitrust Battlers: Readying for Action

Strictly on the surface, it would seem that the recent antitrust uproar has quieted down. The Du Pont cellophane case is the only major chemical case pending in the Supreme Court; a number of other actions have recently been settled quietly out of court (CW, Jan. 1, p. 13).

But this may be just the lull before the storm. There was evidence a-plenty this week that Democrats in Congress are preparing to make a big issue out of merger and monopoly before another month is out. Moreover, the government synthetic rubber disposal package, given a reluctant antitrust blessing by Attorney General Herbert Brownell, Jr., is virtually certain to come under Congressional attack in the weeks immediately ahead.

The rubber sales become final in late March unless Congress, by resolution, vetoes them. General Congressional opinion is that the price for the package is okay but Senators Paul H. Douglas and J. William Fulbright, among others, are sure to blast away at the disposal program on grounds it would foster monopoly. They can make a "record," but there's no evidence they think they can spike the program. For example, Fulbright's Banking and Currency Committee has no plans at this stage even to hold a hearing on it.

That fits in with the Democratic "big" plan. It doesn't mean that there will be no antitrust legislation out of this session, but it does mean that broad investigations will be featured. With just this thought in mind, Democratic old pros on antitrust are getting into position to see that the Federal Trade Commission, under Chairman Edward Howrey, and Brownell's Antitrust Division, under Stanley N. Barnes, get a thorough going over.

These will be the biggest guns in the Democratic attack:

• Sen. Estes Kefauver. He is angling for chairmanship of the Judiciary Subcommittee on Antitrust and Monopoly, which he wants as a forum for a Senate side investigation as broad and detailed as Representative Celler's in the House. Regardless of whether he gets the chairmanship, Kefauver is going to be loudly active.

• Chairman Emanuel Celler of the House Judiciary Committee and its powerful Monopoly Subcommittee. He has laid out plans for a two-year, across-the-board investigation of business practices and government enforcement policies.

Among other things, Celler sees the need to find out what the Justice Dept. is doing to see that research and development awards "are not used to further enhance the monopoly position already enjoyed by Du Pont, General Motors, General Electric, Ford and others." He also wants to bare "the philosophies of the men who make decisions about price and capacity in American industry."

• Chairman Warren G. Magnuson of the Senate Interstate and Foreign Commerce Committee. The Federal Trade Commission, among other independent agencies, must report to Magnuson's group and the senator is vehement in his feeling that Howrey's FTC is "soft" on big business.

First to feel the sting of the Democratic attack will probably be the Attorney General's national committee to study antitrust laws—the so-called Oppenheim Committee. Due to make public its report about mid-March, the committee seems headed for a cool reception on Capitol Hill, because many Democrats are convinced the Oppenheim Committee is "loaded" in favor of big business and will make recommendations tending to weaken antitrust laws. Justice says the Oppenheim report is not intended as a legislative guide, but that won't keep it from becoming a political hot potato.

The Democratic pressure in Congress is, in part at least, a buildup for the 1956 campaign. The Democrats believe that they can pin on the Republican party the label that it is the "party of big business." They believe they can make the charge of monopoly work as a political issue just as effectively as the Republicans have been using allegations of "corruption and communism."

PROF. LA MER: In aerosol shave cream suit, an admittedly needed guide.

No Letup on Lather

Even before Federal Judge William Coleman files his written opinion in the aerosol shave cream lawsuit between Carter Products and Colgate-Palmolive Co., attorneys for Colgate this week have been laying plans for an appeal to the U.S. Circuit Court.

Carter definitely came out on top in the two-month trial that ended last week in U.S. District Court, Baltimore. In a bench decision—an unusual practice in patent litigation—Judge Coleman ruled that Carter's Rise patent (No. 2,655,480) is valid, and that Colgate had illegally appropriated Carter's trade secrets in making Rapid Shave.

But Colgate isn't yielding an inch. A spokesman told *CW* that Colgate still denies the validity of the Rise patent; that Colgate surely intends to appeal; and that Colgate will keep right on making and selling Rapid Shave while the appeal is pending.

Injunction May Apply: Whether Colgate carries out that latter intention may depend on what Coleman says in his written opinion, which he indicated might be ready by this weekend. In finding in favor of Carter, the judge may issue the injunction that Carter originally asked for to stop Colgate from producing and distributing that rival product.

It appears that the judge relied to a considerable extent on his technical adviser—Columbia University's Prof. Victor La Mer—to guide him through the maze of conflicting scientific testimony in the trial. Judge Coleman related to the courtroom audience that he had passed the only college chemistry course he took nearly 50 years ago, but that he was not allowed to do any more laboratory work after one of his experiments made an instructor afraid that young Coleman would "blow up all of Harvard University."

The judge had to evaluate the six earlier patents that Colgate had cited as "previous knowledge" of the art, and to determine whether they made Rise unpatentable as something that was already in the realm of public information. Judge Coleman decided that none of those earlier patents—three in the U.S., one in Belgium, one in Germany, one in South Africa—combined the soap and propellant in such a way as to anticipate the invention and new idea claimed in the Rise patent.

Coleman also ruled that—while Colgate did not offer any inducement for one of the Rise researchers to come to work for Colgate—it failed to inform itself about a "secrecy" contract between Carter and the researcher.

Back in Old Hands

Out of the hands of the U.S., British and French high commissioners and back into the hands of the German stockholders and lawmakers goes the I. G. Farben chemical trust this week, after nearly 10 years under Allied control.

At present, nearly all Farben's former assets are divded among four successor companies — Farbenfabriken Bayer, Badische Anilin- & Soda-Fabrik, Farbwerke Hoechst, and Casella Farbwerke Mainkur.

But under Allied High Commission law No. 84—announced last week at Bonn—there's nothing to prevent those successor companies from being recombined into a modernized reincarnation of the old cartel. However, some company officials are opposed to reunification, and it's possible that the West German parliament may pass a law limiting or forbidding the formation of new trusts.

Showdown Coming: Farben stockholders will take the reins again this April or May at a meeting to be called by the management of "I. G. Farben in Liquidation." This meeting may provide a setting for a major showdown between the promerger and antimerger factions within the subdivided corporation, providing that their hands haven't been tied by a new West German law.

Even if there's no move for formal merger of the successor companies, the stockholders—each of whom received stock in all four new companies in exchange for his old I. G. shares—are likely to approve various plans for cooperation among the successor companies in the fields of research, allotment of production work, and export sales.

Later, Farben stockholders will receive shares in Rheinische Stahlwerke and proceeds from Farben's interest in Chemische Werke Huels. Those Huels assets have been transferred to a new holding company, (Chemie Verwaltung AG), will be held under trusteeship until all claims against I. G. have been settled.

More Time to Fight

Opponents of the move by the U.S. Food & Drug Administration to remove three coal-tar colors from the "approved for use in foods" list are preparing another legal assault in an effort to block the decertification.

Under an extension of time granted by FDA, interested parties now have until March 7 to file exceptions to the tentative order published in the *Federal Register* last month.

Originally, dye makers, citrus fruit growers, drug and cosmetic companies faced a deadline of Jan. 28. They got the additional time, arguing that it was needed to prepare their case.

External Use Only: FDA proposes to take FD&C orange No. 1, orange No. 2 and red No. 32 off the "foods" list, permitting use of these colors only in noninternal drugs and cosmetics.

The order would hit particularly hard on fruit growers using red No. 32 to make oranges more attractive. Fruit growers—as well as makers of the dyes, and drug companies using them in drugs and cosmetics—will argue that FDA has misinterpreted the statutory word "harmless." FDA says it means harmless in any amount—and the three colors have proved toxic in tests on laboratory animals.

Opponents to the tentative banning order will argue that the laws are meant to apply only to colors harmful in the amounts used. Fruit growers say

no one eats orange skins; drug and cosmetic people say the amounts used in their products are not toxic—and so the order should not be issued.

Essentially the same arguments were made before—unsuccessfully—and there is not much chance FDA will modify the order. If it becomes final—sometime after all the exceptions have been considered—opponents will either have to try for a reversal in the courts or ask Congress to rewrite the law.

FDA officials have long wanted to get the law clarified—and this may be the case to force the issue.

EXPANSION. . . .

Uranium: The New Jersey Zinc Exploration Co. (Canada) Ltd., a subsidiary of New Jersey Zinc Co. plans to start explorations for uranium in the Blind River area of the province of Ontario.

Associated in the plans: the Nueva Exploration Co., a new company affiliated with The Texas Co., New York.

The Blind River area is in the Lake Huron region, where previous uranium strikes have been made.

•

Synthetic Rubber: Union Carbide and Carbon Corp. completed final arrangements last week with Italy's Ente Nazionale Idrocarburi (ENI) and its subsidiary, Azienda Nazionale Idrogenazione Combustibili (ANIC) to act as consultant in construction of a $75-million synthetic-rubber-from-natural gas plant at Ravenna, Italy. Ente Nazionale supplies nearly 90% of the natural gas produced in Italy today. The plant (due for completion in two years) will supply butadiene sufficient to produce 30,000 tons of GR-S rubber and 350,000 tons/year of nitrogen fertilizers.

COMPANIES. . . .

A new rash of company incorporations in Dover, Del., this week:

- Chemical Transporter, Inc., 250 shares, no par value.
- Mid-Continent Uranium Corp., $600,000.
- Electro-Chem Fiber Seal Corp., 800 shares, no par value.
- Texas-U.S. Chemical Co., $10 million.
- Universal Plastics Corp., 1000 shares, no par value.
- Cuban-Gulf Sulphur Co., $300,000.

•

A 435,934-share block of Minerals & Chemicals Corp.'s common stock was placed on the market last week at $24.50/share. Proceeds from sale of 125,000 shares will be used to buy limestone properties in Marblehead, O., and Strasburg, Va.; the balance will go to selling stockholders.

•

St. Regis Paper Co. (New York) has received stockholder approval to trade shares of St. Regis common stock for shares of Michigan Molded Plastics, Inc. (Dexter, Mich.). An agreement has already been reached between officials of both companies. Terms: undisclosed.

•

Directors of National Aluminate Corp. (Chicago) proposed to increase authorized common stock from 550,000 to 1.5 million shares, and effect a two-for-one stock split. Stockholder approval will be sought at the company's annual meeting on April 25.

•

International Minerals and Chemical Corp. reports sales for the last 6 months in 1954 rose to $39.3 million from $37.8 million in 1953, but net profits slipped to $2 million (or $.78/share), from $2.2 million (or $.87/share). The anomaly—sales up, profit down—is due chiefly to increased depreciation charges, heavy operating costs.

•

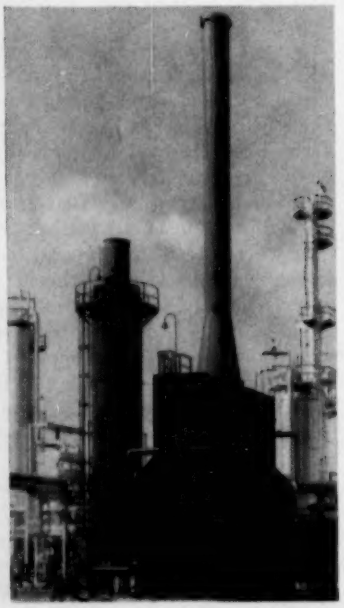
Wasco Chemical Co. (Cambridge, Mass.) has bought part of the Goodall-Sanford, Inc. textile property in Sanford, Me. Production of industrial plastics, Wasco officials say, will start soon.

•

A U.S. investment group has withdrawn its offer of more than $50 million for control of Borax Consolidated, Ltd. (London). Two chief reasons given for the withdrawal: Borax's board of directors refused to supply certain relevant information to the U.S. buyers, and did not apply for British government consent to transfer the company to U.S. hands. Included in the group of aspiring U.S. purchasers: Model, Roland & Stone (New York), and the Capital Research and Management Co. (Los Angeles).

•

Directors of Rohm & Haas Co. (Philadelphia) will recommend at a stockholder's meeting on April 19 that authorized $20 par value common stock be increased from 1 million to 2 million shares. Reason: Rohm & Haas unissued authorized stock has dwindled to some 26,000 shares as a result of stock dividends in recent years.

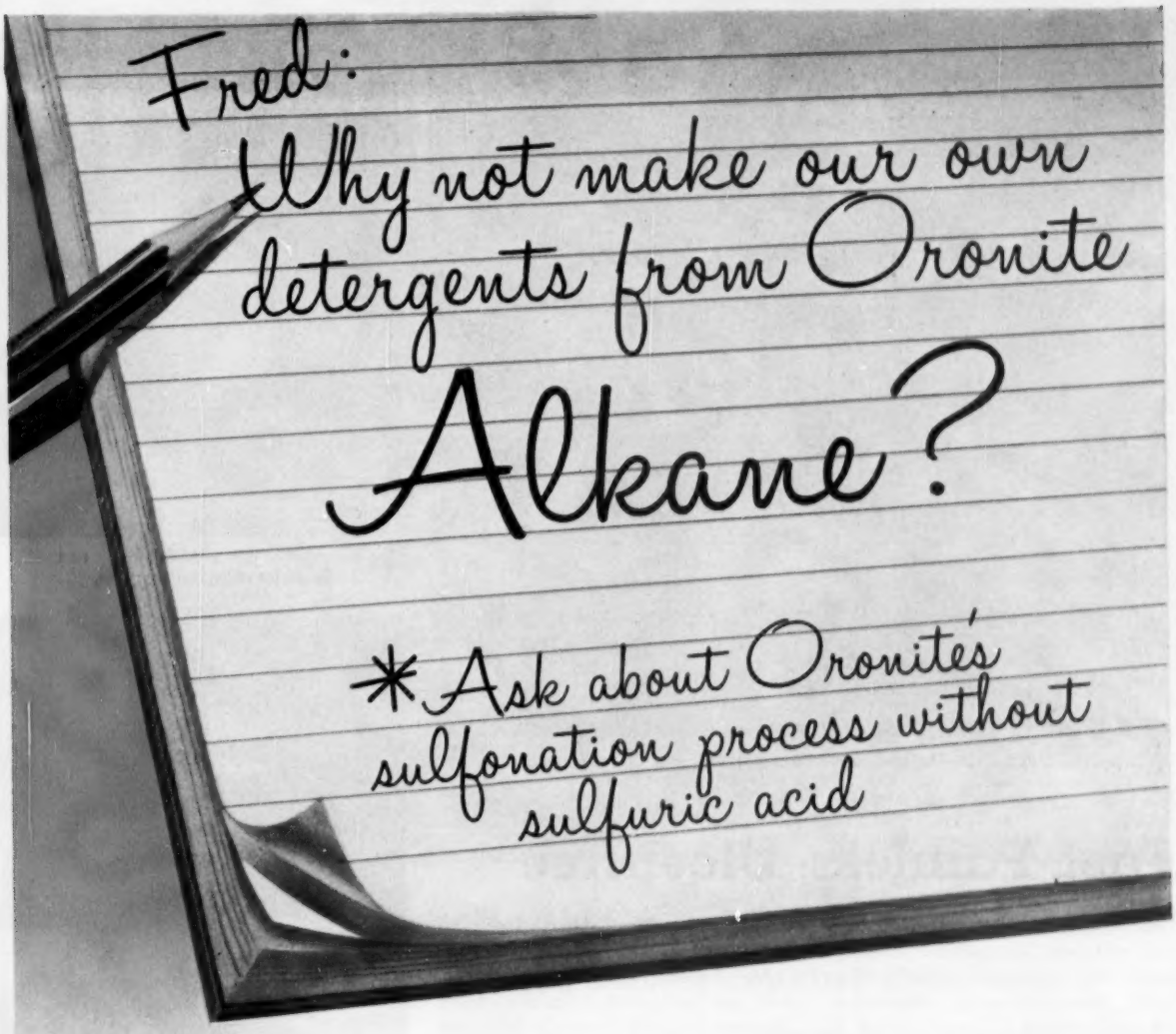


Dual-Purpose Expansion

WHEN Tide Water Associated Oil's aviation gas processing units went onstream last week at the company's Avon Flying A refinery, consumers of sulfuric acid in the area were promised an increased source of supply. Output of high octane gasoline is rated at 420,000 gal./day; by-product hydrogen sulfide will be used to make sulfuric acid at a plant jointly owned by Tide Water and Monsanto Chemical Co., St. Louis.

Tide Water's hydrogen Platformer *(see cut)* is a two-unit operation:

The first catalytic process removes most of the natural sulfur and other impurities; the second is a platinum catalyst reformer to produce aviation gas.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UNION NEGOTIATORS: In pact with Stauffer, proof that bargaining can be . . .

1 Company officials Gottlieb and Dees enter bargaining room,

2 spread out contract proposal papers on broad desk facing . . .

3 local's eight-man bargaining committee headed by full-time unionist.

Fast, Painless, Ulcer-free

That a chemical company and a chemical union can hammer out mutually satisfactory union contracts without costly, time-consuming, ulcer-inducing preliminaries is proved anew by Stauffer Chemical Co. and Local 12941 of District 50, United Mine Workers of America, whose new two-year contract goes into effect this month.

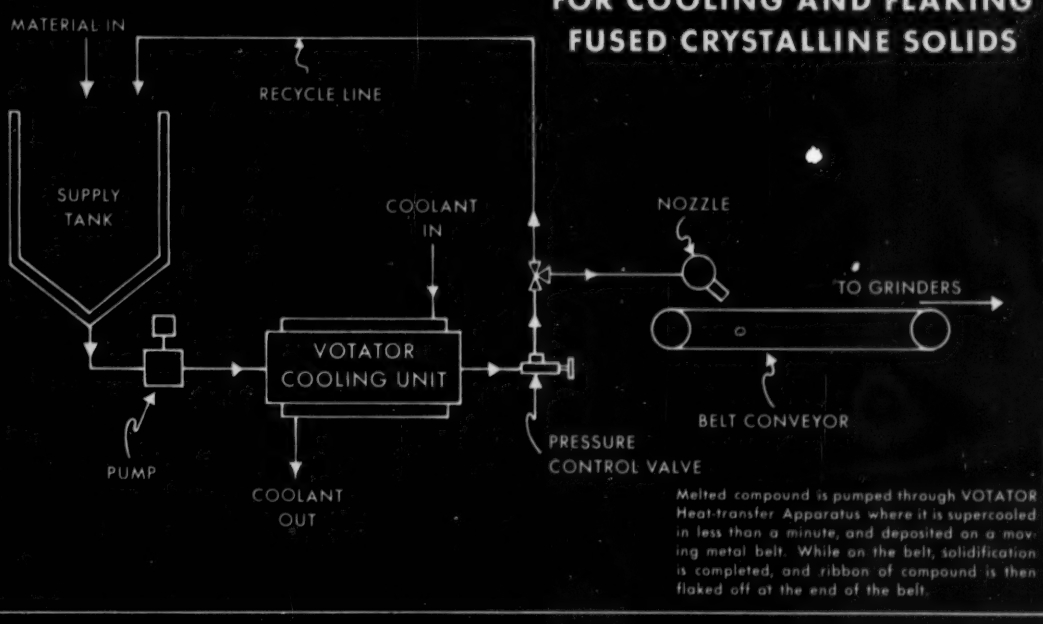
It took just four meetings between company and union negotiators to reach agreement on a pact that was speedily ratified by the approximately 100 members of the local, who man Stauffer's 43-year-old sulfur and potassium nitrate plant at Chauncey, N.Y., near the Hudson River some 10 miles north of New York City. Across the road is a Stauffer research and development unit for which the plant force furnishes maintenance and utility services.

Obviously it's not just blind luck when a plant operates that long without a single strike and with only "a couple of grievances a year." This week, the CW CAMERA pokes its lens into the negotiations that produced the new contract, points up the company and union policies that seem to smooth the road to contract renewals without pain.

No Amateurs: On the company's part, one basic plank in Stauffer's labor platform is that this work is delegated to a trained and experienced official who serves as full-time director of employee relations, with ample authority to negotiate. Similarly, UMWA policy calls for a trained and experienced union staff member to serve as chief bargainer for each local. Result: bargaining is usually crisp, businesslike, to the point; there's little danger that inept words or rash statements will lead to loss of production and wages.

Speaking for the company in the Chauncey bargaining was J. W. (Jim) Dees, whose 20 years in the industry have been divided between Du Pont and Stauffer. He started out in production, working up to the plant superintendent level before his appointment as director of employee relations in 1946. Directly under him are an assistant director and four managers of employee relations; these six men represent the company in negotiations with all 40 local unions that bargain

FLAKING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Story begins on p. 18

UNION LOCAL President Mead opens meeting at which members discuss terms, then ratify agreement by show of hands.

LEAVING MEETING HALL, members show satisfaction with new contract that's signed later by the men who negotiated it.*

for Stauffer employees. Under company policy, the plant manager sits in on bargaining sessions; at Chauncey, this role was filled by R. J. (Bob) Gottlieb.

Heading the union delegation at Chauncey was Joe Gentile, Sr., UMWA national representative who for the past four years has been attached to District 50's New York office under Regional Director A. J. Cefalo. Backing him up were President Louis Mead (who has worked at the Chauncey plant more than 15 years as mechanic and bulldozer operator) and five other leading members of Local 12941.

Seven-Week Story: Shaping a new contract took place at a calm, steady pace and was finished within seven weeks. The new agreement was closed more than two weeks before the old one expired. Here's the two parties' unhurried timetable:

Dec. 6—Local 12941 served 60-day notice on the company and on the Federal Mediation & Conciliation Service.

Dec. 15—Negotiators held first meeting, exchanged demands and proposals.

Jan. 4—Second meeting.

Jan. 7—Union bargaining committee reported back to membership, received further instructions.

Jan. 11—Third bargaining session.

Jan. 21—Fourth and last bargaining session. Negotiators agreed on certain changes in old pact, dropped demands for other revisions. At general membership meeting in nearby Dobbs Ferry that evening, the union ratified the contract by virtually unanimous vote. (What the workers liked: a 5¢/hour wage increase now, another 5¢ next January, various rate adjustments and an additional paid holiday.)

Both company and union prepared for the renewal by assembling data on wages and fringe benefits in other industries in the locality, at Stauffer plants in other parts of the country, and in certain other chemical companies. Union demands were drawn up at a general meeting shortly before negotiations began; company proposals were based on conferences between plant and headquarters personnel and on changes made by the board of directors' committee on employee benefits in certain company-sponsored benefit programs.

Operating a chemical plant is far from simple, and drafting the ground rules for that operation can be highly complex. But—as demonstrated again by the people at Chauncey—this job can be wrapped up promptly and painlessly when both sides mean business.

* Front row—Mead, Gentile, Dees, Gottlieb, Nick Scallero and Andrew Ferranto; back row—Anthony Mannuccice, Patrick Furilla, Joseph Gentile, Jr., and Peter Schmidt.

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Diethyl Amine	73.14	0.7062	55.5	inf.	inf.
Triethyl Amine	101.19	0.7293	89.7	5.5	4.6
Isopropyl Amine	59.09	0.6881	32.4	inf.	inf.
Diisopropyl Amine	101.19	0.7178	84.1	inf.	inf.
n-Butyl Amine	73.14	0.7385	77.1	inf.	inf.
Di-n-Butyl Amine	129.24	0.7613	159.6	0.47	6.2
n-Hexyl Amine	101.19	0.7675	131.8	67	1.2
2-Ethylhexyl Amine	129.24	0.7894	169.1	0.25	25.3
Di-2-Ethylhexyl Amine	241.45	0.8062	280.7	<0.02'	0.17

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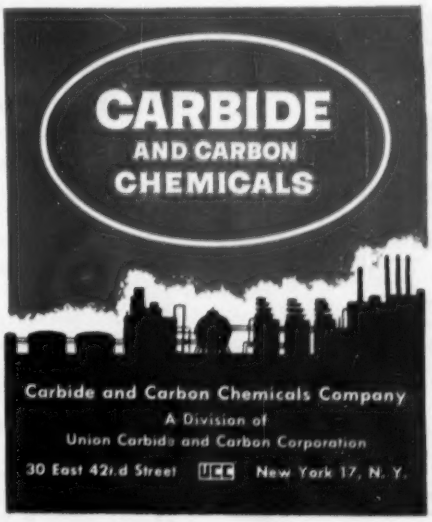

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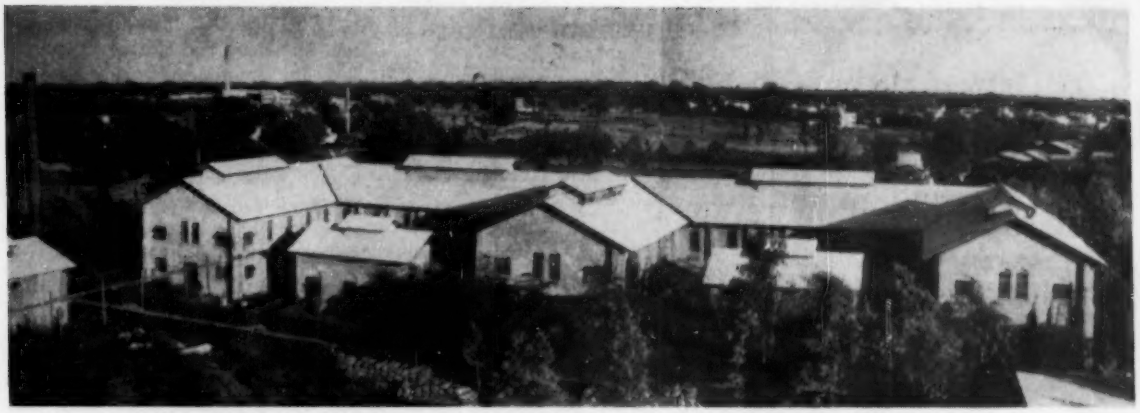

SARABHAI CHEMICAL: In India, Squibb's licensee is showing promise, but there's still a need for . . .

Restriction Relief

While physician-members of New York's Academy of Sciences enthusiastically discussed reserpine's medical possibilities late last week, fretful pharmaceutical manufacturers were still seeking relief from the rauwolffia supply shortage. Chief complaint: they've been strapped for the past six months by India's embargo on reserpine's main source—the indigenous rauwolffia root.

Main reason that the embargo is being enforced, India officials say, is to prevent root stocks being depleted by the sudden U.S. demand for rauwolffia. Drugmakers here counter this Indian opinion by pointing out that—historically—no drug has ever been depleted in this manner. It's always been possible, they claim, to induce pickers to go a little deeper into areas to find and harvest more.

If it's only a conservation problem India's worried about, botanical importers reason, the government would certainly permit export of limited amounts of rauwolffia to guard its lucrative U.S. market. But since even that concession isn't being made, there's more than a mild suspicion that something else is behind the embargo enforcement.

Indian government spokesmen are matter-of-fact about the ban, though, say that apart from conserving the root, they're interested in quality control, too. Attempts are being made now, they say, to raise root quality, weed out poor materials at their source. Goal: higher monetary returns to India's drug industry, greater benefit to the Indian nation as a whole.

But U.S. companies have an answer to that statement, too, claim (1) it doesn't take six months to set up quality controls, and (2) if that were the basic aim, India wouldn't risk losing its market in the process.

What's Behind It? Though hard to prove, there's good reason to suspect that India's government—keenly anxious to build new production facilities at home—may be toying with the idea of extracting the important alkaloid ingredient of rauwolffia itself, and then exporting it at a premium. What's left would be sold to anyone interested enough to buy.

But that type of thinking could easily boomerang on Indian producers. When the Egyptian government tried the same tactic by forbidding export of Ammi visnaga seed, it found U.S. drugmakers unwilling to buy the processed material, which they branded "unreliable." Industry here sought, and found, other cheaper sources of seed for its own extraction.

Right now, that's exactly what seems to be happening to rauwolffia. U.S. "drug prospectors" have already started to uncover completely new sources of the root for use in reserpine manufacture. And if the embargo continues much longer India may find itself in the same unenviable position—with a large supply of finished product and no markets.

Making Matters Worse: India's attitude toward our industry arises not out of unwillingness to cooperate with U.S. pharmaceutical firms but rather from "inexperience." U.S. drug houses (with licenses in India) charge the government with "slowness" in correcting the situation. Though India on the one hand seeks to encourage home industry as much as possible, it unwittingly prevents its expansion in other devious ways. Example: a special "loading" charge is placed on imports of bulk antibiotics, which a licensee is then expected to subdivide. This ruling, of course, discourages the very thing India wishes to encourage—home expansion. Likewise, India's government has been quick to tender handsome royalties (6-12%) to U.S. drug firms interested in providing know-how to licensees, but has been slow to pay its royalties. One U.S. company, after five years of operations with a licensee, is only now about to receive its first royalties. Delay, the government says, is caused by "technical difficulties." Though sales have progressed satisfactorily, according to the U.S. firm, there's still much to be desired in the way of restriction relief from Indian government "shyness" and "lack of experience."

What other U.S. companies are looking for now from India's government is more than just immediate lifting of the rauwolffia embargo, however. They're seeking greater understanding from government agencies, less distrust of U.S. firms operating jointly with Indian producers. "We're ready to match our capital investments and know-how with India's youthful enthusiasm and proved technical ability," says one overseas licensee director, "but India's officials will have to provide the right climate if unanimity is to be achieved."

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Prediction of Action

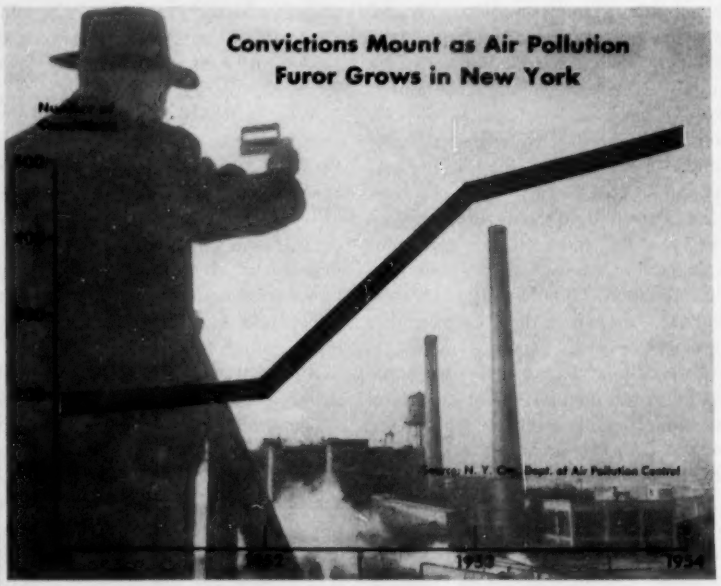
New twist in the President's Health Plan, delivered to Congress last week, was a request for federal funds to step up research into air pollution—including the smogs that have recently affected major U.S. cities.

Washington observers feel that the health bill as an entity faces an uncertain future in Congress. (Virtually the same bill last year was defeated in the House, received strong opposition from the American Medical Assn.)

Lauren Hitchcock, president of the Air Pollution Foundation, is optimistic, however, that "immediate Congressional action will be taken in the smog battle." Noting that the foundation is, at present, drawing up recommendations for federal participation at the request of U.S. Surgeon General Leonard Scheele and California Senators Knowland and Kuchel, Hitchcock feels the program now stands a good chance of acceptance.

Further: Hitchcock predicts that both Kuchel and Knowland will support a $500,000 supplementary appropriation by next July 1 for federal smog relief, and points out that an interdepartmental committee (appointed by President Eisenhower and headed by Scheele) has already submitted a report backing heavy smog research expenditures—$5 million annually for five years' basic research into smog problems. Reason: "the atmosphere over some population centers may be approaching the limit of its ability to absorb air pollutants with safety to health."

Legislators as a whole, however, remain to be convinced.



Warning of Things to Come

CLEAN AIR costs money. That's the opinion of Leonard Greenburg, New York City's Commissioner of Air Pollution Control. Seeking a $146,255 increase over the department's 1954-55 budget, the commissioner claims that New York today has a smaller per capita outlay for air pollution abatement than most major cities. Result: for every air pollution offender picked up, one gets away. That wouldn't be true with additional funds, however. With more inspectors, improved transportation, and better automatic air sampling equipment, Greenburg promises that "as soon as smoke is spotted, inspectors on patrol will be on hand to serve a violation or summons notice."

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an interesting alkenylsuccinic anhydride

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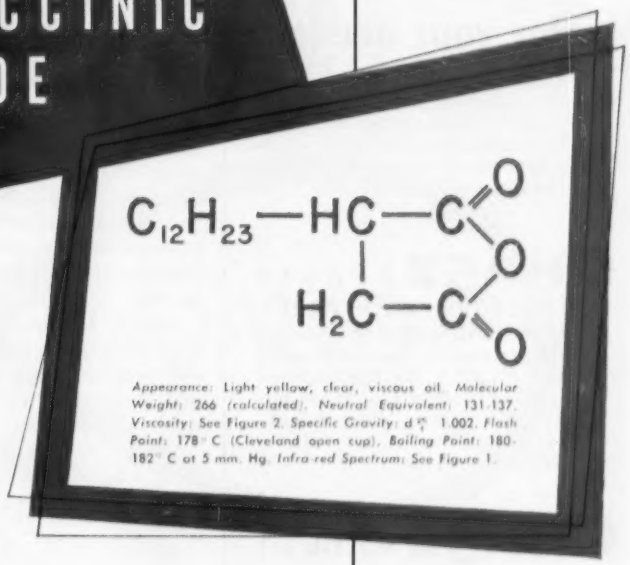
DODECENYLSUCCINIC ANHYDRIDE



Appearance: Light yellow, clear, viscous oil. *Molecular Weight:* 266 *(calculated). Neutral Equivalent:* 131-137. *Viscosity:* See Figure 2. *Specific Gravity:* d_4^{25} 1.002. *Flash Point:* 178° C. (Cleveland open cup). *Boiling Point:* 180-182° C at 5 mm. Hg. *Infra-red Spectrum:* See Figure 1.

The unusual molecular structure of this bifunctional alkenylsuccinic anhydride, reacting as an unsaturated compound and an acid anhydride, should interest all who work with

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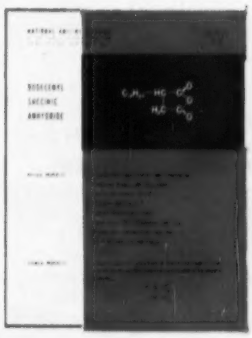

WRITE FOR TECHNICAL BULLETIN I-8

This 6-page bulletin gives physical properties, chemical reactions, suggested uses and literature references.

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LEDERLE IN MEXICO: Pattern for Chilean operations.

FOREIGN. . . . .

Pharmaceuticals/Chile: Chilean representatives of the Lederle Laboratories Division of Cyanamid Inter American Corp. (New York) will build a plant (similar to the company's Mexican facilities, *above*) to produce pharmaceuticals. Cost: $700,000; site: Santiago.

Lederle Laboratories Division will grant Laboratorio Chile, S.A. a $100,000 credit to launch the new venture, will supply an additional $10,000 worth of equipment.

When in operation (some 18 months hence) the plant should save Chile $600,000 in foreign exchange annually.

•

Phosphates/Sweden: Sweden has placed raw phosphates on the list of goods that may be imported from the dollar area without special license.

•

Paint/Mexico: Sherwin-Williams Co.'s new $500,000 plant in Mexico is now in operation. Located at Vallejo, north of Mexico City, the facilities replace former production units in the capital city itself. Chief products: latex wall paint and alkyd enamel—both for Mexican consumption.

•

Toilet Articles/Peru: Colgate-Palmolive, S.A., wholly owned subsidiary of Colgate-Palmolive Co., will enter the Peruvian market by April with local manufacture of a limited line of toilet goods. The bulk of needed equipment has already arrived in Peru, is being installed in a 3-story building leased from Pacocha, S.A. in the Rimac district of Lima. All packaging materials (with the exception of talcum cans) will be produced locally; the bulk of the raw materials will be imported.

This makes the eighth Latin American venture by Colgate-Palmolive.

•

Urea/Korea: McGraw-Hydrocarbon—a joint venture of F. H. McGraw & Co. (Hartford, Conn.) and Hydrocarbon Research, Inc. (New York)—has been notified by the Korean Embassy in Washington that it has been selected to negotiate construction contracts for a $25-million fertilizer plant in Korea. The contemplated plant would have an annual capacity of 80,000 tons of fertilizer; estimated completion date: mid-1956.

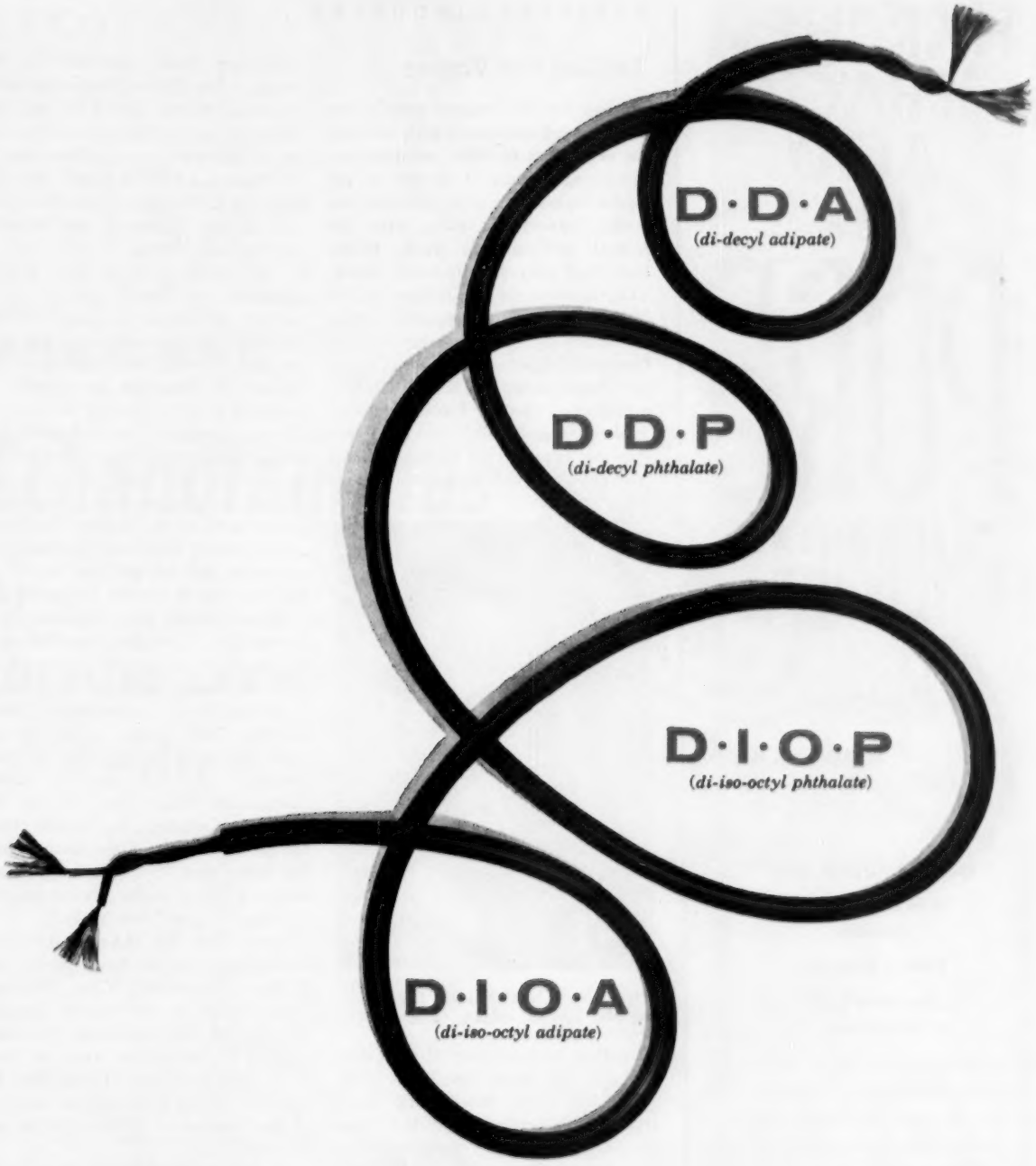
•

Paper/India: Three U.S. specialists in newsprint production (on loan from Florida paper mills) are working on India's first government-owned newsprint plant, which went into production last week. Built at a cost of $12 million, the National Newsprint and Paper Mills, Ltd.'s new plant will manufacture one-third of the nation's annual newsprint requirements (110,000 tons) when full production begins in April.

•

Urea/India: Montecatini, the Italian chemical colossus, has the contract to build a $14-million urea and ammonium nitrate plant at Bihar, East India. It will be adjacent to present Sindri fertilizer units at Bihar.

Last year, the Indian government invited bids for the project, received tenders from British, U.S., West German and Italian engineering companies.



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Telling the Voters

Fearing that government people may be too much concerned with boosting the economies of other countries and not enough aware of dangers to domestic industries, some chemical industry leaders are going over the federal government's head, telling their tariff story directly to the voters. This, in effect, is one mission of the 100-man speaking committee being assembled by the Synthetic Organic Chemical Manufacturers Assn. under the chairmanship of R. W. Hooker, president of Hooker Electrochemical.

Members of this committee are available for speeches to business and civic groups in their home communities as well as to employees of their own firms. In all cases, they'll be plugging "The Third Side to the Tariff Issue," an exposition of SOCMA's plea for setting tariff rates on an item-by-item basis to insure that the U.S. will have ample industrial capacity to produce goods needed in case of national defense emergency.

FABIAN BACHRACH

SOCMA'S GODRON: In "third side" crusade, lead-off speaker in Midwest.

Company Experiences: Being mailed this week to committee members is a newly published SOCMA booklet called "Pocket Piece for Speakers," which gives outlines for two suggested speeches along with statistical data on chemical exports, imports, and tariff rates.

But it's already clear that each speaker is going to contribute some of his company's own experiences in delivering these speeches. For example, when F. Scott Godron of Victor Chemical Works opened the speaking campaign in the Midwest with a talk before last week's regional meeting of the American Coke & Coal Chemicals Institute in Chicago's Drake hotel, he told of two unpleasant brushes with foreign competition.

"By 1920," Godron told ACCCI delegates, "we had begun the manufacture of formic acid at Chicago Heights. This venture ended disastrously in 1922, only because of the failure of Congress to provide a sufficient tariff to ward off the raids of German producers who flooded the market with formic acid at cut prices. As soon as we withdrew from the market, the Germans raised prices of formic acid to the highest level the market would bear—and the American consumer did not get the benefit of the low cost of foreign production."

Import Limits: More recently, Godron went on, Victor lost a good foreign customer for sodium phosphate when that customer's government refused to permit further importations of that material. The reason: sodium phosphate began to be produced in that country. The U.S., Godron notes, doesn't do things like that for its domestic industry. He recalls that former Secretary of State Dean Acheson stated that "the U.S. is operating under very few quotas, almost no import licensing, and low tariffs."

In the East, SOCMA's tell-it-to-the-voters campaign has been sparked by Phillips Petroleum's Cary Wagner (who spoke at the eastern section meeting of the American Pharmaceutical Manufacturers Assn. at New York) and by Ernest May of Otto B. May Co. (who addressed a meeting of the League of Women Voters at Summit, N.J.).

In launching this speaking campaign, SOCMA is not aiming at the Cooper bill (H.R. 1) to renew the reciprocal trade act for three years, or at any other specific piece of legislation. Rather, the association is hoping that its battery of speakers throughout the country—each speaker making an average of one speech per month in his own community—will have a long-range effect in educating the citizens on the SOCMA thesis that "the third side to the tariff issue—the side of selective security tariffs—provides the only practical American tariff policy."

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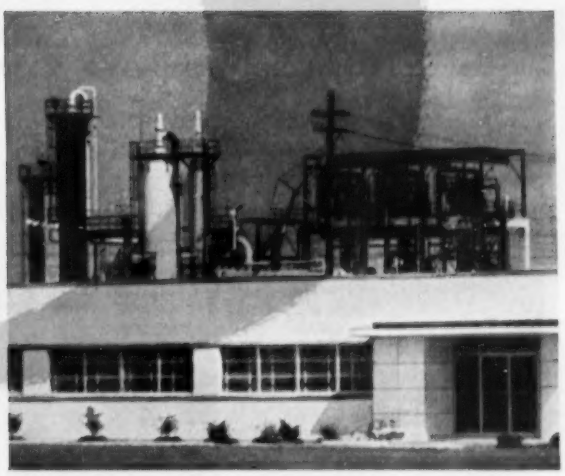

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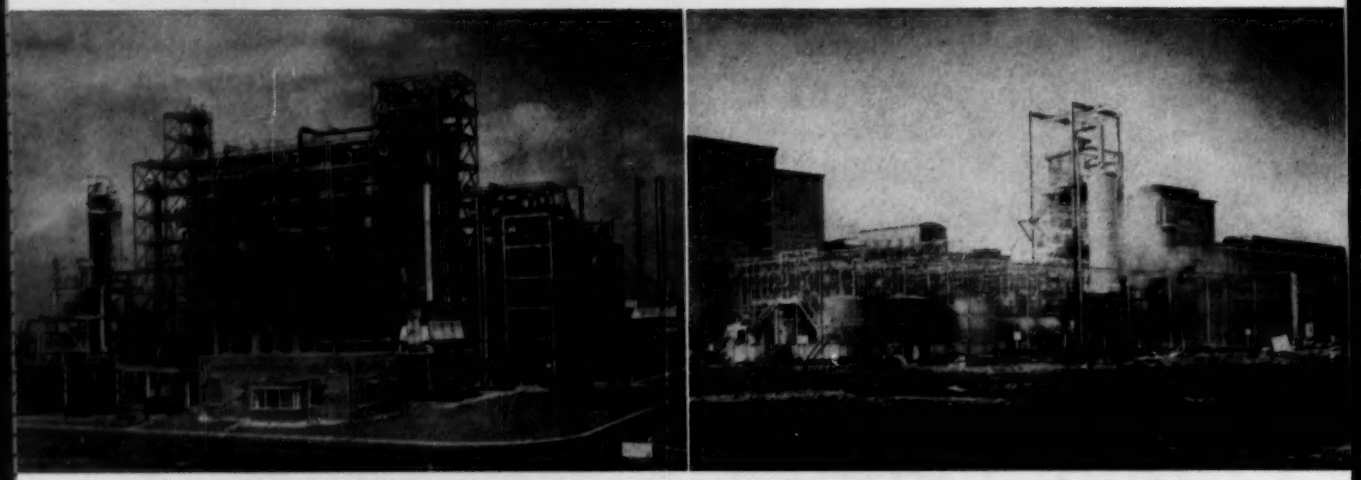
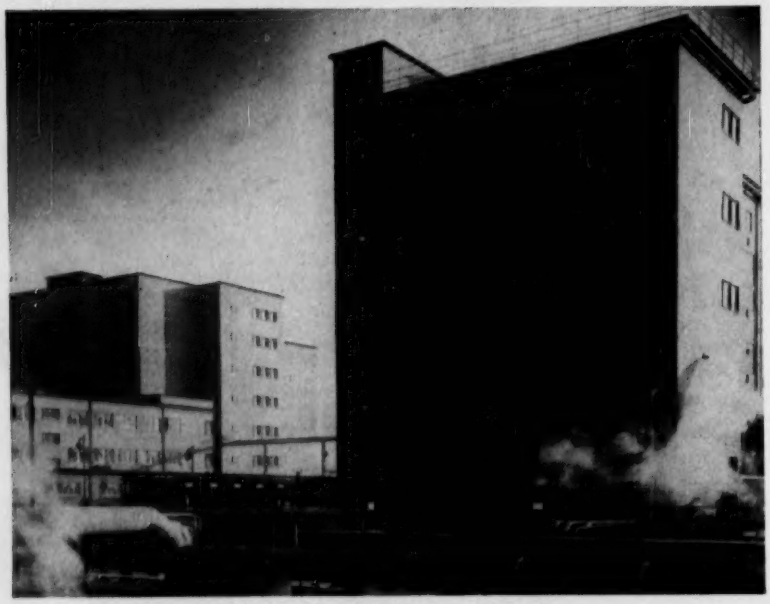
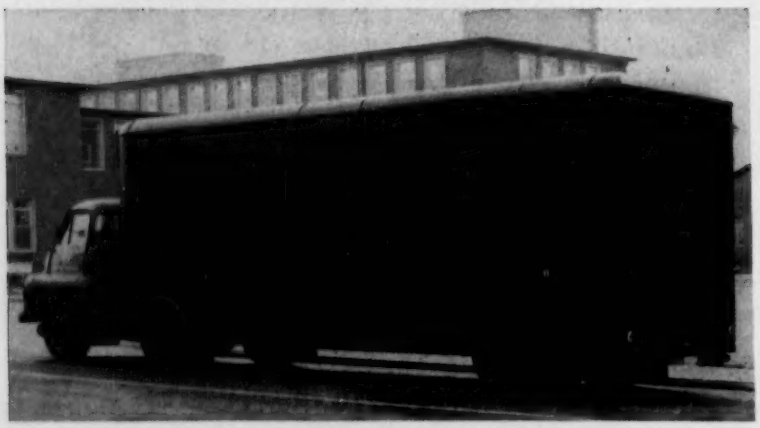


START TO FINISH OPERATION: Ethylene glycol (left) and terephthalic acid (right) are produced at Wilton . . .



. . . reacted and polymerized to Terylene polymer . . .



. . . dried, melted, extruded into staple fiber, shipped to customers.

Going Ahead—Full Steam

From any man's view, Imperial Chemical Industries' new Terylene units at Wilton, Yorkshire, are an imposing venture. Built at a cost of $28 million, the integrated plants are already producing 2.2 million lbs./year of Terylene, brook fair to turn out a capacity rate (11 million lbs.) of staple fiber before the end of the year. And if current construction plans hold to schedule, additional facilities will hike the total to 22 million lbs. "sometime in 1956."

Site of the development is a 2000-acre development in northeast England, bought by ICI in 1946. Ultimately, company officials expect to spend upwards of $280 million on construction; to date they've invested $112 million in the area, have approved plans totaling $168 million for capital improvements.

The British market seems well able to support such heavy investment in synthetic fibers. Outlook now is that even 22 million lbs./year of Terylene will far from satisfy the British textile industry's requirements (now estimated at some 400 million lbs. of synthetic fibers annually).

From a production standpoint, ICI's Terylene units will be operated on a 24-hour/day basis; ortho-, meta-, and para-xylene (bought from the petroleum industry) will be barged directly to company docks. Total employment: 1600; estimated monthly expenditures: $2.1 million.

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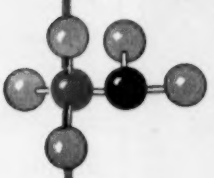


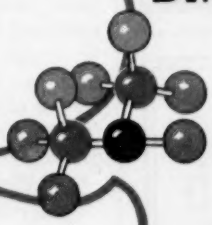
MONOMETHYLAMINE CH_3NH_2

Uses

Manufacture of amide and sulfonated amide-type detergents and surfactants. Synthesis of caffeine, aminophylline and desoxyephedrine. Manufacture of photographic chemicals, the explosive tetryl, amide-type plasticizers, ion-exchange resins, corrosion inhibitors and paint removers.

Properties

Molecular Weight	31.06	
Boiling Point at 760mm, °C	– 6.79	
Flash Point, Tag Open Cup, °F	34	(30% sol)
Density at 20°C	0.912	(30% sol)
Weight per U.S. Gallon at 68°F, lbs.	7.6	(30% sol)



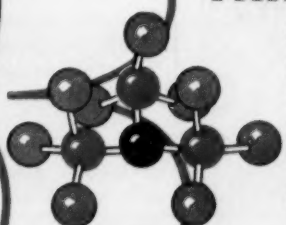
DIMETHYLAMINE $(CH_3)_2NH$

Uses

Raw material in manufacture of thiuram sulfide-type vulcanization accelerators and of dimethyldithiocarbamic acid salts used as fungicides. Neutralizing and solubilizing agent in preparation of concentrated solutions of 2,4-D salts. Manufacture of anti-malarials.

Properties

Molecular Weight	45.08	
Boiling Point at 760mm, °C	6.88	
Flash Point, Tag Open Cup, °F	54	(25% sol)
Density at 20°C	0.921	(25% sol)
Weight per U.S. Gallon at 68°F, lbs.	7.7	(25% sol)



TRIMETHYLAMINE $(CH_3)_3N$

Uses

Preparation of long-chain quaternary ammonium compounds used as softeners, lubricants and waterproofing agents for textiles. Used with benzoyl peroxide to "set" methacrylate resins. Synthesis of cationic surface-active agents.

Properties

Molecular Weight	59.11	
Boiling Point at 760mm, °C	2.87	
Flash Point, Tag Open Cup, °F	38	(25% sol)
Density at 20°C	0.913	(25% sol)
Weight per U.S. Gallon at 68°F, lbs.	7.6	(25% sol)

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CSC
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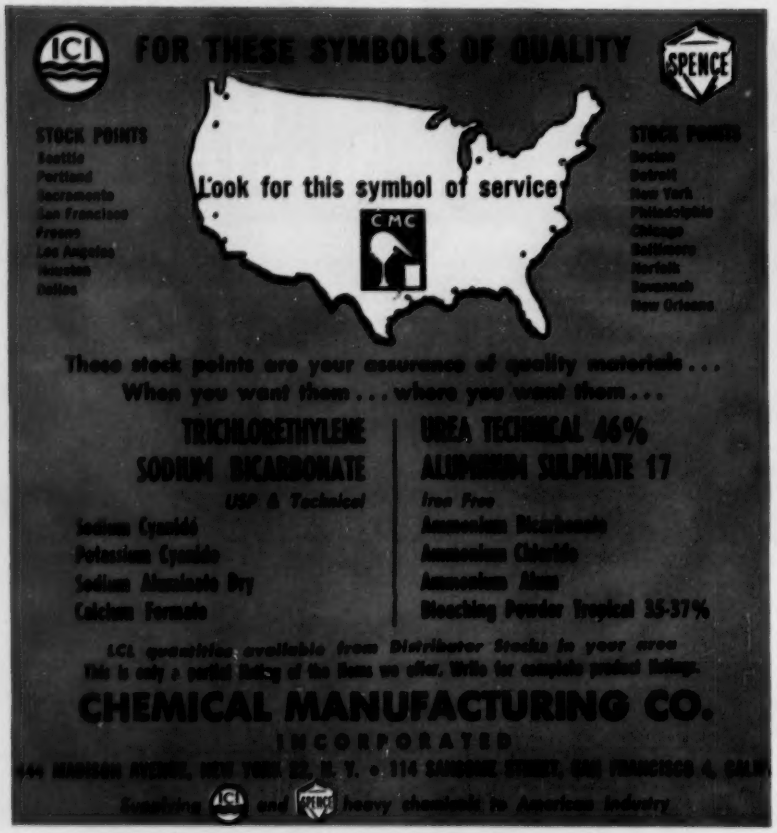

WITCO CHEMICAL COMPANY

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The transaction was negotiated
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SHIELDS & COMPANY

January 20, 1955

LYN CRAWFORD, MC GRAW-HILL

AUTHOR BAILEY: On controversial cancer drug, he stakes his career.

Hope or Hoax?

The folks who believe that Krebiozen actually helps combat cancer are still in there pitching, it appears from the book "Krebiozen—Key to Cancer?" published in New York last week.

Its author—Herbert Bailey, Chicago free-lance author on medical subjects—is one of those people who have firm faith in the controversial chemical extracted from animal blood; and equally firm faith in Dr. Stevan Durovic, the refugee Yugoslavian physician who claims discovery of the drug; and in Dr. Andrew Ivy, University of Illinois vice-president who has been the principal champion of the supposedly hormone-type compound.

Accordingly, his 312-page book is primarily a defense of Durovic and Ivy, and an attack on the element within the American Medical Assn. that has branded the drug "worthless." Bailey also relates a number of medical case histories in which doctors in various states have reported that use of Krebiozen has been followed by reduction in size or disappearance of tumors.

The drug—whose chemical identity has not yet been established—is still being tested in certain kinds of cancer cases, Bailey says. He says that two U.S. pharmaceutical firms each offered Durovic about $1 million for patent rights, but that Durovic refused both offers, preferring to supervise the testing himself.

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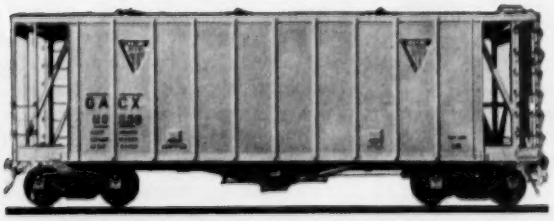

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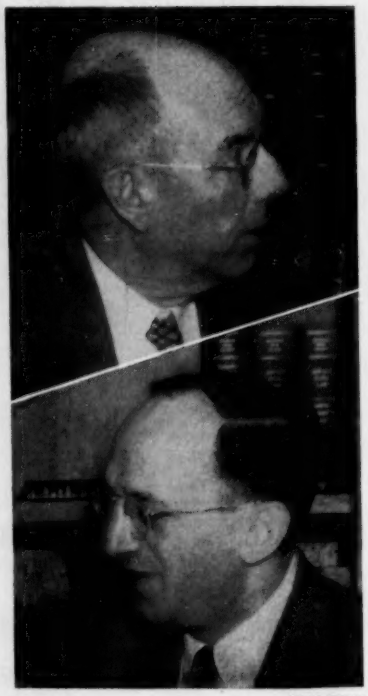
B & I. . . . . .



WIDE WORLD

JUDGES MARIS, KALODNER: On lower court's patent ruling, they concur.

LEGAL. . . . . .

Process Tiff: At Philadelphia, the U.S. Court of Appeals for the Third Circuit has upheld the trial court's dismissal of the patent infringement suit that had been brought nearly five years ago by Darsyn Laboratories (Hawthorne, N.J.), against Gamma Chemical Corp. (New York). Darsyn, a subsidiary of Metalsalts, had accused Gamma of infringing patent No. 2,489,530 for manufacture of hydroxyquinoline. Gamma freely admitted that it was making the compound, but denied that it was using the patented process. Testimony in the district court at Newark indicated that the Gamma process was not in the temperature range of the Darsyn process, and Circuit Judges Albert Maris, Gerald McLaughlin and Harry Kalodner affirmed the lower court's finding that there was no infringement.

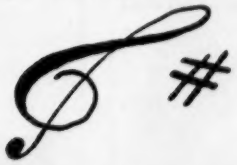
•

Plant Suit Settled: Chemical Construction Corp. and Virginia-Carolina Chemical Corp. have patched up their differences over payments for construction work done by Chemico at V-C's works at Nichols, Fla. One year ago, Chemico took the dispute into court with a civil suit to recover $916,-

Good voices galore...

but close harmony comes harder!

THERE'S LOTS of buying references that do adequate jobs covering solo segments of purchasing activity. The BUYERS' GUIDE of Chemical Week, however, is the one *complete* buying handbook covering all phases of information necessary for the purchase of both chemicals and process equipment. It's actually four major directories in one single volume . . . a quartet of services that solves buying problems quickly and profitably. Here's what these sections offer to you.

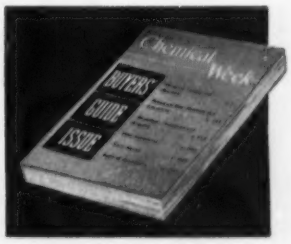


COMPANY CATALOG AND DIRECTORY: A comprehensive list of manufacturers and jobbers of both chemicals and equipment, complete with home offices, addresses and telephone numbers of district and sub offices. Company catalogs are interspersed throughout this section.

CHEMICAL DIRECTORY: Lists more than 5,300 chemicals, raw materials and specialties . . . with grades, uses, and types of packaging given under each product heading. Includes names and addresses of manufacturers and suppliers.

EQUIPMENT DIRECTORY: This section is comprised of over 2,300 items of equipment, containers or supplies commonly used in the Chemical Process Industries, complete with names and addresses of manufacturers and suppliers.

TRADE NAME DIRECTORY: Always one of the GUIDE's most popular and useful features, the Trade Name Directory is the most thorough-going list of chemical trade and brand names ever published.



Buyers' Guide Issue of . . . Chemical Week

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PHENYL MERCURY COMPOUNDS

•

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6. A solvent in industrial cleaners and for agricultural chemicals.

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Physical Properties

Sp. Gr.	0.9019
B.P. at 760 mm.	171.2°C.
Flash Point (C.O.C.)	165°F.
Sol. in H_2O at 20°C.	Complete
Sol. of H_2O in at 20°C.	Complete
Viscosity	6.42 cps.
Toluol Dilution Ratio (½ sec. N.C.)	3.5

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B & I. . . . . .

099 plus interest. Last week, the two companies jointly announced that the suit has been settled "to the satisfaction of both parties," and that the superphosphate, sulfuric and uranium plants involved "are now in commercial production."

•

No Fertilizer Combine: The Canadian government has issued a clean bill of health to that country's fertilizer companies. The combines investigation branch reported to the House of Commons that it had made inquiries among mixers of fertilizers in eastern Canada following informal complaints by certain farmers' organizations, but had found no collusion.

LABOR. . . . . .

New Bargaining Weapon: In his first term as vice-president of United Gas, Coke & Chemical Workers (CIO), Roberts Buchanan is planning to initiate a new service for bargaining committees of the union's locals. The union's research and education department has been furnishing company financial statements, and Buchanan feels that this "often means the difference of a few cents' wage increase for our members." Now he advocates expanding this service by preparing for each local union at contract renewal time figures on cost per unit of production and net profit per man-hour worked. "With such information," Buchanan says, "the companies will no

GAS-COKE'S BUCHANAN: For union bargainers, rebuttal to companies' data.

100% Corrosion-Proof

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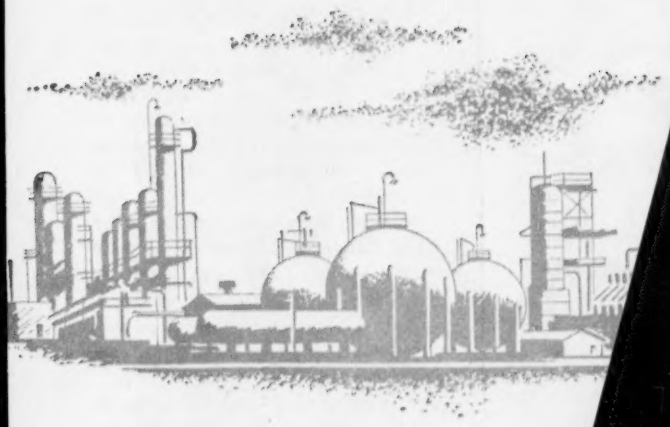

Here is a corrosion-proof chemical motor with enough flexibility to fit *your* requirements. It's *Totally* Protected.

Interesting features about this motor are brought out in detail in a new booklet entitled "From Naphtha to Grain Dust". It's worthwhile reading to find out *why* this motor has won wide-spread recognition in the chemical field.

Get your copy today by mail, or through your local Reliance district sales office or distributor.

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An experienced Dracco engineer will be glad to discuss your problem with you and evaluate the potential savings possible with the Dracco "Airstream" technique. For a highly informative brochure, write:

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in bulk materials handling and dust control

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B & I . . . . . .

longer be able to bluff us at the bargaining table."

•

State Labor Laws: Numerous proposals to change state labor laws—such as wage-and-hour regulations, workmen's compensation, and fair employment practices—are being discussed in many state capitols this week. Among pending bills in states with heavy chemical industry build-ups:

• In California, stiffer rules for the state's unemployment benefits program have been suggested by Assemblyman Harold Levering, Los Angeles. He says his proposed amendments are based on ideas given him by people from labor, management and the State Dept. of Employment.

• A bill to create a new Delaware State Labor Dept. has been introduced by Rep. William Lester, St. Georges. The department would be governed by a seven-man board with power to act as mediator in threatened labor disputes.

• Arguing that "reasonable regulation is necessary both for protection of good industry and for protection of employees," Gov. Timmerman of South Carolina is asking his legislature to establish a committee "to make a thorough study of state labor laws and make recommendations for revision."

KEY CHANGES. . .

John H. Hilldring to president and board member, General Aniline & Film Corp., New York.

Sidney E. Harris, to director, pharmaceutical production, Hoffmann-La Roche Inc., Nutley, N.J.

M. W. Reynolds, to general manager, Acheson Colloids Co., and **P. C. Buck,** to manager, engineering and production, Acheson Industries, Inc., New York.

John G. Penniman, to manager, Emulsion Division, Reichhold Chemicals, Inc., New York.

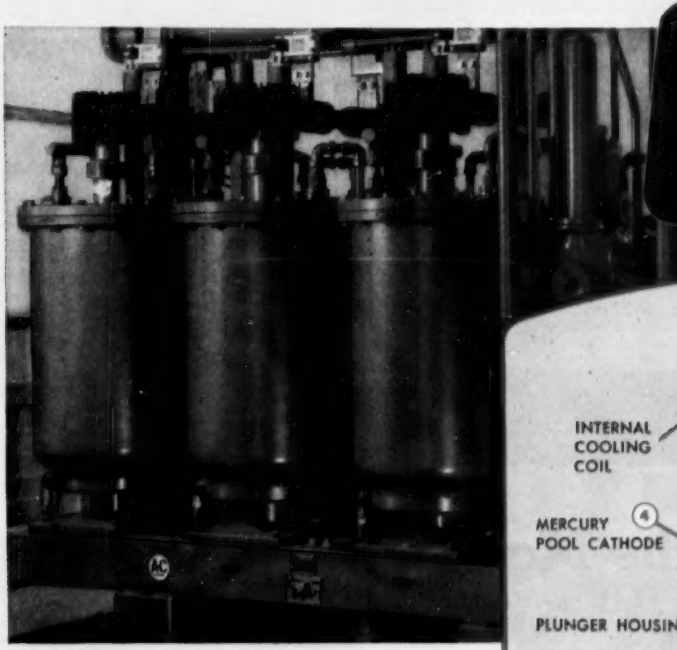
George R. Bryant, to president, Jefferson Chemical Co., Inc., New York.

Robert E. Hulse, to director, National Distillers Products Corp., New York.

Erik K. Pfau, to president, Home Products International, Ltd., New York.

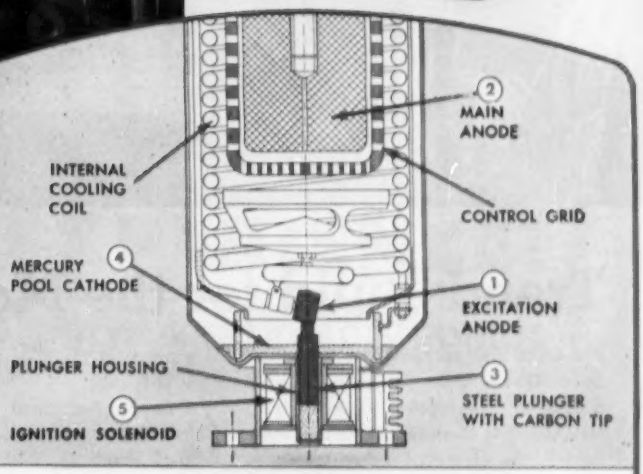
Here's the Rectifier That Needs

No Delicate Adjustments



This 1000-kw, 6-tube excitron rectifier is typical of units used for heavy-duty service in many industrial plants.

ALLIS-CHALMERS
Mercury Arc Rectifiers



Unique Plunger Starts Continuous Excitation

The excitron tube has an excitation anode ① in addition to the main anode ② . With the excitation circuit de-ener ,ized, the steel plunger ③ floating in the mercury pool cathode ④ makes positive contact with the excitation anode (as shown).

When the excitation circuit is energized, the ignition solenoid ⑤ pulls the steel plunger ③ away from the excitation anode ① and under the mercury pool cathode ④ , thus drawing a dc arc and forming the cathode spot, which makes conduction of load current by the tube possible.

If power is interrupted the plunger will float up, contact the excitation anode and automatically re-establish the excitation arc when power is restored.

LITTLE MAINTENANCE IS NEEDED with Allis-Chalmers excitron-type rectifiers. Excitation of the excitron rectifier is continuous, while other types of rectifiers require re-ignition 60 times a second.

Since it is more difficult to start a rectifier arc than to maintain it, the excitron rectifier is much less likely to lose excitation during operation. Momentary dips in supply voltage which are encountered in many supply systems have no effect on the continuous excitation arc.

Years of operation in hundreds of installations have proved the reliability and ease of operation of Allis-Chalmers mercury arc rectifiers. You can get complete information from your nearby A-C office. Or write Allis-Chalmers, Milwaukee 1, Wis.

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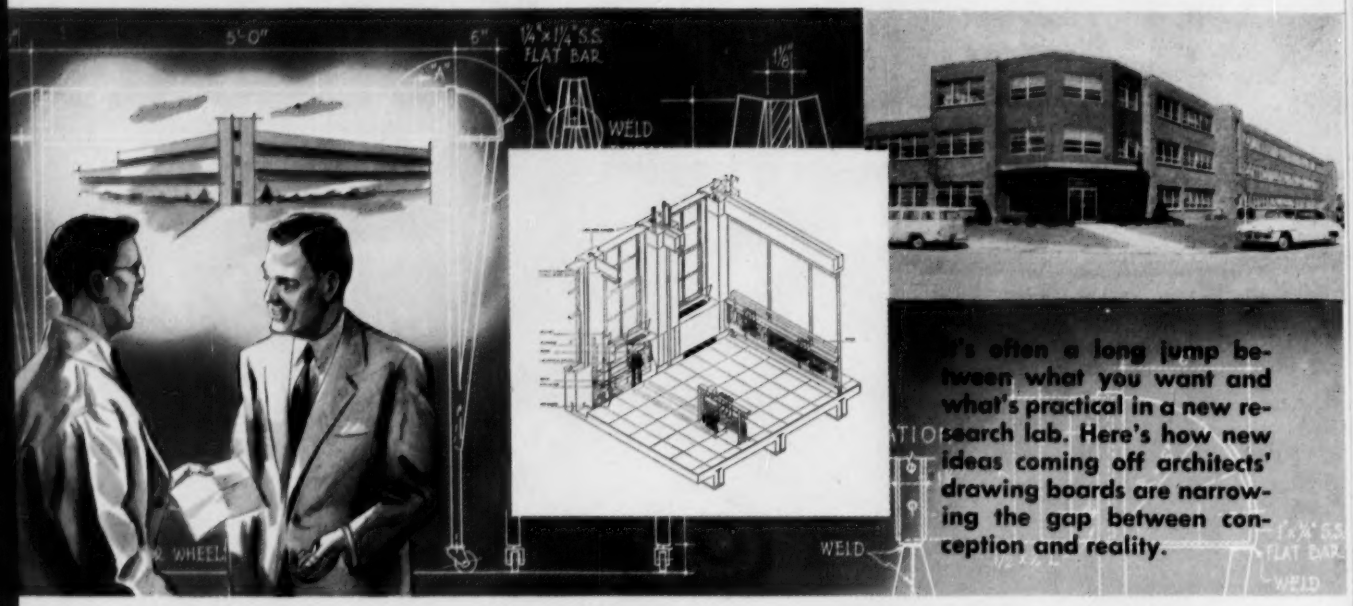
ALLIS-CHALMERS



...'s often a long jump between what you want and what's practical in a new research lab. Here's how new ideas coming off architects' drawing boards are narrowing the gap between conception and reality.

Trend: Build for the Man

For industrial architecture, the years since World War II have been a period of accelerated development. Nowhere has this been more apparent than in the chemical industry, which last year alone spent better than $20 million for new research laboratories, and still has an estimated $38.1 million worth planned or under construction. This unprecedented building pace has forced the emergence of lab design features that normally might still be years in the future.

The new look reflects four major trends:

- The effort to put a lid on the rising capital-investment rate in research.
- Growing realization that a lab's design influences the productivity of its staffers.
- Mounting activity in the relatively new field of radioactivity—with its rigorous safety and layout problems.
- Tight competition among chemical firms in recruiting and keeping top-flight researchers.

One of the most significant tenets of progressive lab architecture is the emphasis on features (lounges, decor, etc.) calculated to appeal to a man's senses. Also consistent with this trend is a move in favor of smaller laboratory buildings.

A leading exponent of this idea is Ralph Walker, partner in the New York firm of Voorhees, Walker, Smith and Smith, designer of the Du Pont experimental station, Standard Oil Development Co.'s Linden, N.J., research center and other major scientific facilities.

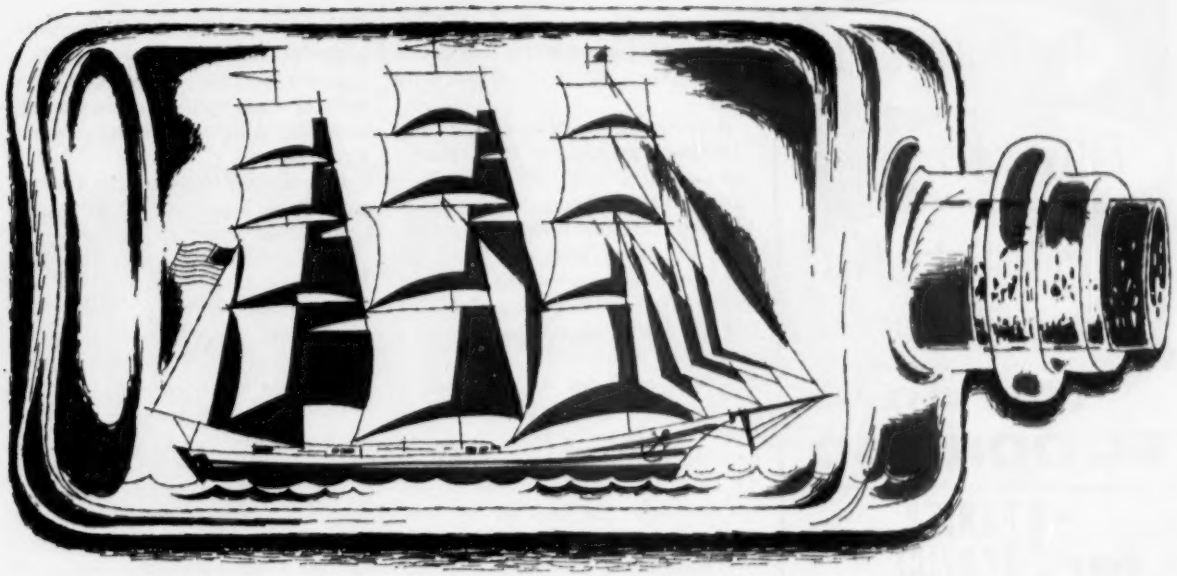
"A small building," says Walker, "does a lot to eliminate the little-cog-in-a-big-wheel feeling that most researchers don't like." He visualizes clusters of smaller structures, connected by underground corridors, replacing the multistoried research buildings that are now the rule.

In line with putting the accent squarely on the individual in laboratory planning, Walker endorses the movement of labs into attractive suburban or rural environs. But he cautions against becoming overenthusiastic about cheap, wooded sites. Reason: they frequently are associated with extremely high building costs. Putting a lab on a hill, a common penchant of company engineers, can mean other headaches—e.g., prohibitive costs for water procurement and sewage disposal.

In Walker's estimate, all this adds up to a strong case for meticulous site planning—especially when the structure is to house a large staff. You can't start soon enough, he believes, to meet conditions of topography, zoning, traffic, and public opinion *(CW, April 25, '54, p. 101)*.

ARCHITECT WALKER: He believes in putting the accent on the individual.

All architects and builders like to be in from the beginning on management's plans for a new lab, Walker admits. But the company can often help itself by doing some preliminary thinking before calling in the profes-



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sionals. Steadily growing in popularity is the idea of constructing a model of the proposed structure, at an early date.

A strong booster of models is Wells Thompson, president of H. K. Ferguson Co. (New York), which has built labs for Solvay Process, International Minerals, Diamond Alkali, Union Carbide, etc. Says Thompson: "Many of our clients are realizing to a greater extent than ever that a model is well worth the effort, especially in the case of intricate structures."

Models need not be elaborate or expensive, maintains Thompson, and they can save many times their cost by minimizing changes unforeseen on the blueprints. Many research people are astounded, he reports, by how much it costs to make an alteration once building is under way.

In general, good lab planning embraces considerations of flexibility, economy and safety. Moreover, it's a dynamic problem; requirements in each of these spheres are constantly changing, constantly posing new design problems.

One of these hinges on the growing amount of paper work in research. Since laboratory space is far more expensive than office space, there's a strong move afoot among lab designers to get desks out of the lab. Researchers, however, resist this scheme, usually want to do their desk chores close to the bench.

The increasing amount of radioactivity research is another important force working to change the shape of new laboratories. Safety considerations are behind such increasingly familiar sights as lead and concrete-shielded working areas and yard-thick viewing windows. Even in low-level

Shape of Things to Come?

A LANDMARK of the nuclear age, the newly completed monolith above is Washington, D.C.'s first atomic bomb-resistant research laboratory building. In this rear view, the windowed sections delineate offices and a lunchroom (considered expendable in event of attack). Labs and working areas have no windows; nor are there any other openings in the protective walls.

Designed to protect both the lives of its occupants and a store of research records, the new building (located on the grounds of Walter Reed Hospital) will provide working space for 450 scientists and technicians of the Armed Forces Institute of Pathology.

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Fatty Acids
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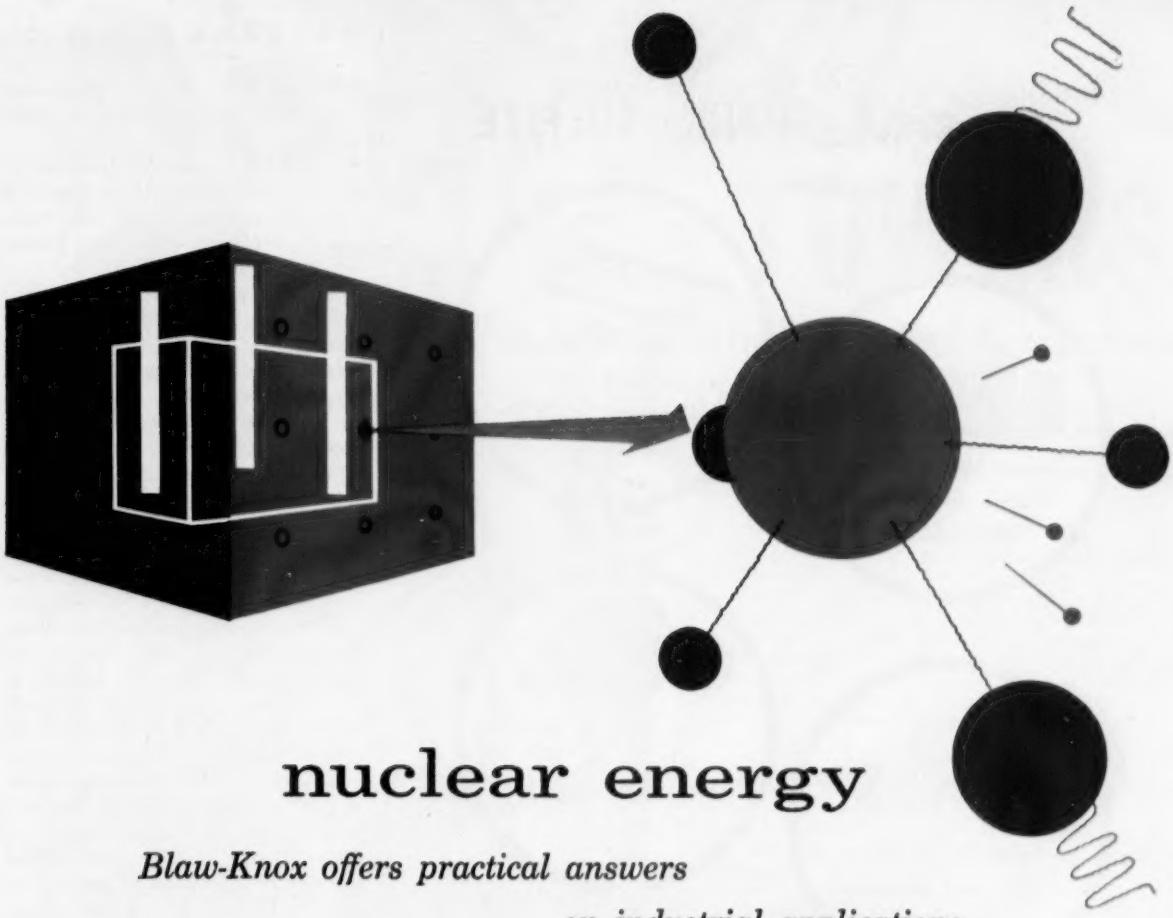

nuclear energy

Blaw-Knox offers practical answers on industrial applications

Within recent months, much progress has been made in providing industry with information about the powerful new tool, nuclear energy. In many fields, only the details of commercial application remain to be worked out. To those who take the initiative belongs the competitive advantage.

Exciting prospects are in view—nuclear energy as a source of power—preservation of foods without refrigeration or canning—detection of impurities in quantities as little as one part in a billion—chemical analysis and reaction by neutron activation. This is only the beginning, but it's up to you to take the initiative.

How can nuclear energy be put to work for you? We doubt that anyone can give a pat answer. Each application will require individual study.

The first step is consultation with a firm qualified to advise you. Blaw-Knox has a great breadth of construction and engineering experience on a wide variety of nuclear energy projects, including: *engineering design of the world's first Materials Testing Reactor—engineering of the fuel processing plants for Atomic Bomb projects—ore processing for uranium production.*

Put this experience to work for you. Blaw-Knox Chemical Plants Division engineers will work with the members of your staff to determine the applicability of nuclear energy to your particular needs. Preliminary consultation will cost you nothing. Why not call Blaw-Knox now?

● *All reactor development is undertaken in accordance with the provisions of the Atomic Energy Act and subject to the approval of the Atomic Energy Commission.*

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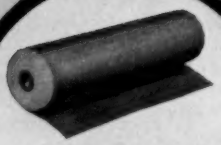

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OTHER MAAS AND VICTOR CHEMICALS FOR INDUSTRY

Sodium phosphates—Ammonium phosphates—Calcium phosphates (Food grade and stock feed grades)—Potassium phosphates—Phosphoric acid—Surface active agents—Oxalic acid—Oxalates—Formic acid—Formates—Acetic acid—Sodium hyposulfite—Sodium sulfite—Sodium carbonate—Triethanolamine phosphate—a full range of photo pure chemicals—and many more.

radiation work, where such precautions are unnecessary, there are problems that must be faced.

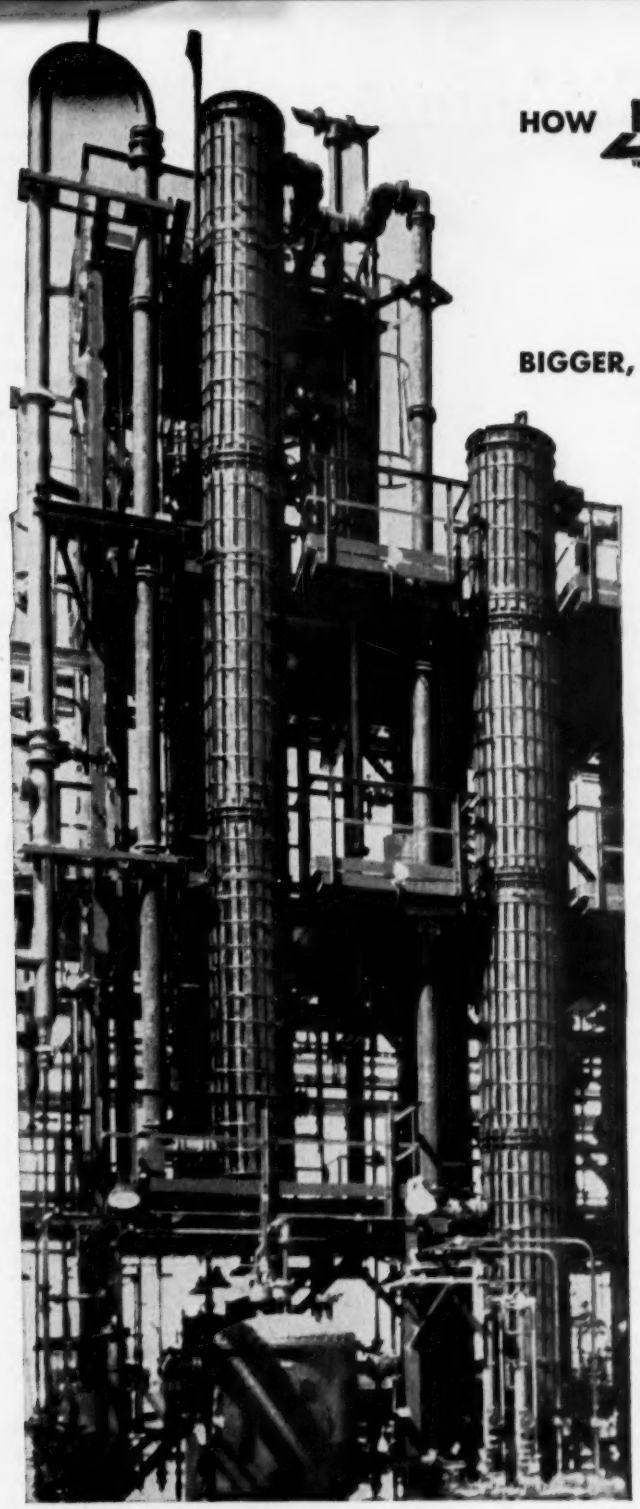
The need for easy decontamination, when necessary, is sparking a hunt for non-porous flooring and table tops, readily strippable paints and protective coatings, etc.

Radioactivity may even settle the long-standing dispute over the proper role of windows in lab design. One school holds that, because of glare and heat loss, fenestration should be held to a minimum; lighting, it maintains, should be exclusively artificial. Another strong division of opinion maintains that broad expanses of glass are desirable for their buoying psychological effect. If bomb-resistant lab structures, such as the windowless one shown on p. 42, become the vogue, this argument may be rendered academic.

Mixed Opinion: Some experts advise planning as you build—in order to permit immediate ordering of hard-to-get materials and equipment. Their critics believe in having complete plans and specifications before a spade of earth is turned, claim it's the way to avoid costly building revisions.

But on one count there is general agreement: there's no substitute for carefully thinking out what is wanted, working up a model or a set of preliminary plans to convey these ideas. The modern research laboratory can be more than a place to work: properly conceived, it can be the best showcase a company can have.

BUILDER THOMPSON: To avoid pitfalls, build first in miniature.



HOW HAVEG HELPS YOU BUILD

TOWERS

BIGGER, BETTER, CORROSION-RESISTANT

This was a big, exacting job for an old Haveg customer, and a good example of Haveg's usefulness as a material and a process equipment manufacturer. The project engineers specified towers of Haveg to eliminate their major problems in the fight against corrosion.

FIRST, WHAT IS HAVEG?

Haveg is a plastic material sold in finished process equipment, or as a cement for construction of plastic equipment in the field. It is not paint or a coating. Made from acid-digested asbestos bonded with special corrosion-resistant resins, Haveg is usually molded and cured into its finished forms: Cylindrical and rectangular tanks and towers, pipe and fittings, valves and pumps, fume duct systems, heat exchangers. Haveg takes high sustained temperatures (over 265°F. with a wide margin of safety). It resists thermal shock, seldom requires insulation.

HAVEG CAN BE BIG

Because Haveg is a molded plastic with adequate physical strength for self-supporting equipment, large equipment can be made. Diameters from ½ inch to a maximum of 10 feet can be built up in sections. The towers illustrated were assembled three and four high, with standard metal flanged connections. Metal inserts for connecting studs can be embedded in Haveg at the time of molding. However, most pipe connections are molded into the wall ready to take any standard pipe.

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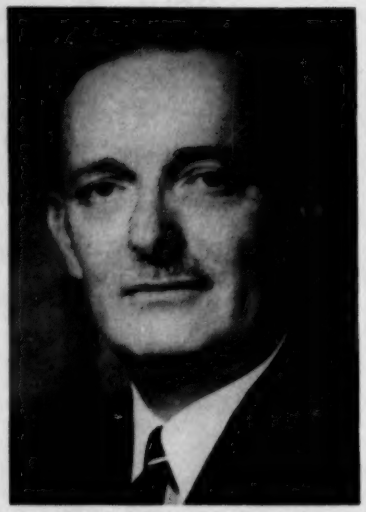

SCHERING'S BROWN: Fireworks shaping up?

Question of Ownership

If possession is truly nine points of the law, two promising new anti-arthritis drugs are, for all practical purposes, in the public domain. That's the crux of a very sensitive situation that this week is the chief item of pharmaceutical research interest.

The substances in question are meta-cortandralone and metacortandracin, the cortisone-like synthetic hormones unveiled last fall by Schering Corp. (Bloomfield, N.J.).

At that time *(CW, Nov. 20, '54, p. 82)* Schering revealed that it was working with two new steroid hormones that appeared to show several times the anti-arthritic activity of cortisone and compound F (hydrocortisone), and none of the major side effects usually associated with the latter agents.

Late in January, the structures of the hopeful therapeutics were revealed by way of a report to the New York Academy of Science's two-day conference on hydrocortisone. Joseph Bunim, National Institutes of Health researcher, who is taking part in clinical evaluation work, reported on results obtained in 15 advanced cases, disclosed the drugs to be close relatives of the cortisones.

Scarcely had Bunim regained his seat when word went out that Merck & Co. had been working with the two compounds, was capable of commercially producing them. The question on the tongues of many: Why had Merck not previously revealed a proprietary interest in the new drugs?

Merck's reply: since the clinical results reported thus far were obtained with Schering-produced materials, it (Merck) did not feel called upon to insert itself into the proceedings. Merck, however, stated to *CW* that its researchers synthesized the hormones in an investigation of cortisone variants, had studied them at the Merck Institute for Therapeutic Research.

Reached last week in his New York office, Schering President Francis Brown would not comment on the Merck claim. But it was no secret that Schering regarded the turn of events with something less than equanimity. However, the company appeared confident that its published work with the popular compounds and efforts to promote their clinical appraisal would cement its ownership claims. Schering has filed patent applications on the drugs.

If patents are granted (to anyone) legal fireworks are a distinct possibility. Any strong new entry into the $15-million/year cortisone and hydrocortisone market is worth fighting for. There's no indication of the potential cost of the hopeful drugs, but there reportedly is no reason to believe they will not be competitive with their older hormone cousins.

By week's end, however, the situation was more confused than ever. In a tersely worded statement *(CW Newsletter, Feb. 5)*, Jasper Kane, Chas. Pfizer & Co. vice-president in charge of research, reported that his company "has developed an entirely new method" of producing the celebrated hormones. A fermentation technique, the Pfizer process, according to Kane, "appears to have economic significance for the production of these two new drugs."

Whether this means that the fermentation technique is ready to produce commercial lots more economically than could a straight synthesis remains a matter of conjecture. But cortisone process experts were agreed that still another hat would likely be tossed into the ring before too much more time elapsed: Upjohn, which pioneered much of the research on fermentation cortisone, was yet to be heard from.

*Structures: metacortandralone is deltal (1, 4) pregnadiene-17a, 21-diol-3, 11, 20-trione; metacortandracin is delta (1,4) pregnadiene-11b, 17a, 21-triol-3, 20-dione.

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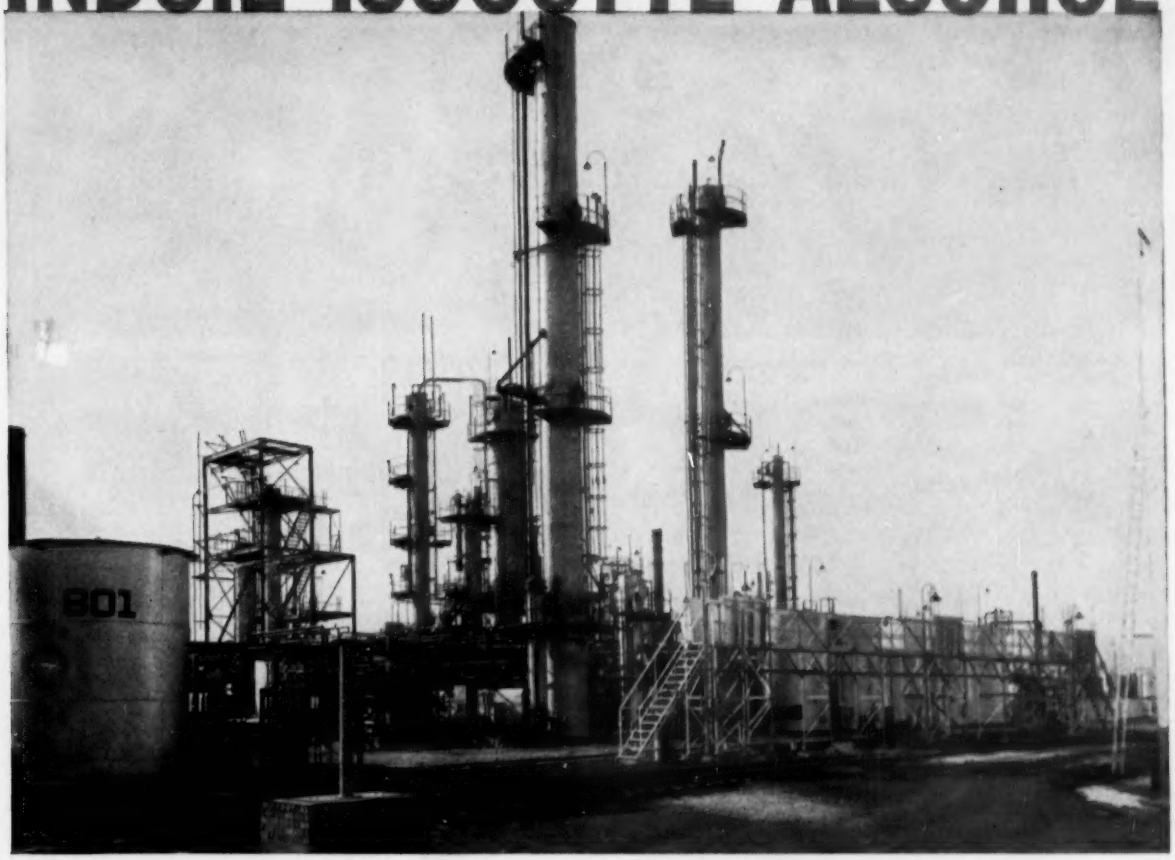

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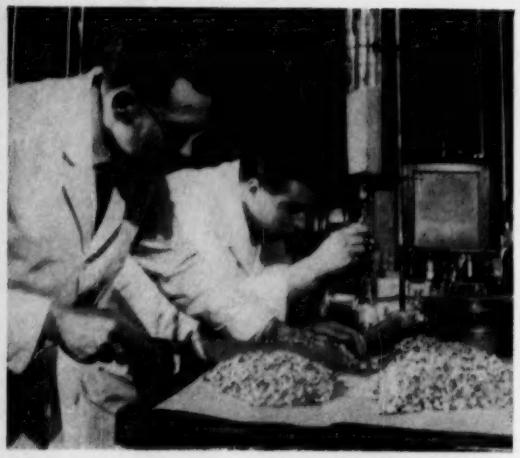
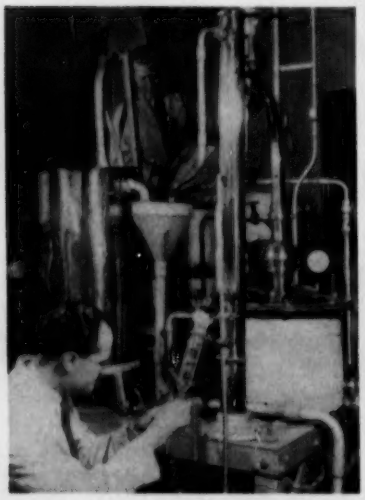
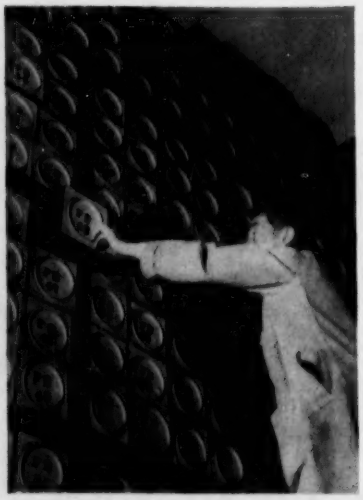


LAB DIRECTOR R. A. E. Galley (second from left) guides such diverse projects as pyrethrum insecticide study (right) . . .

. . . papermaking from African reeds and grasses . . .





. . . and essential oil process probe (left). Samples are filed in coded tins (right).

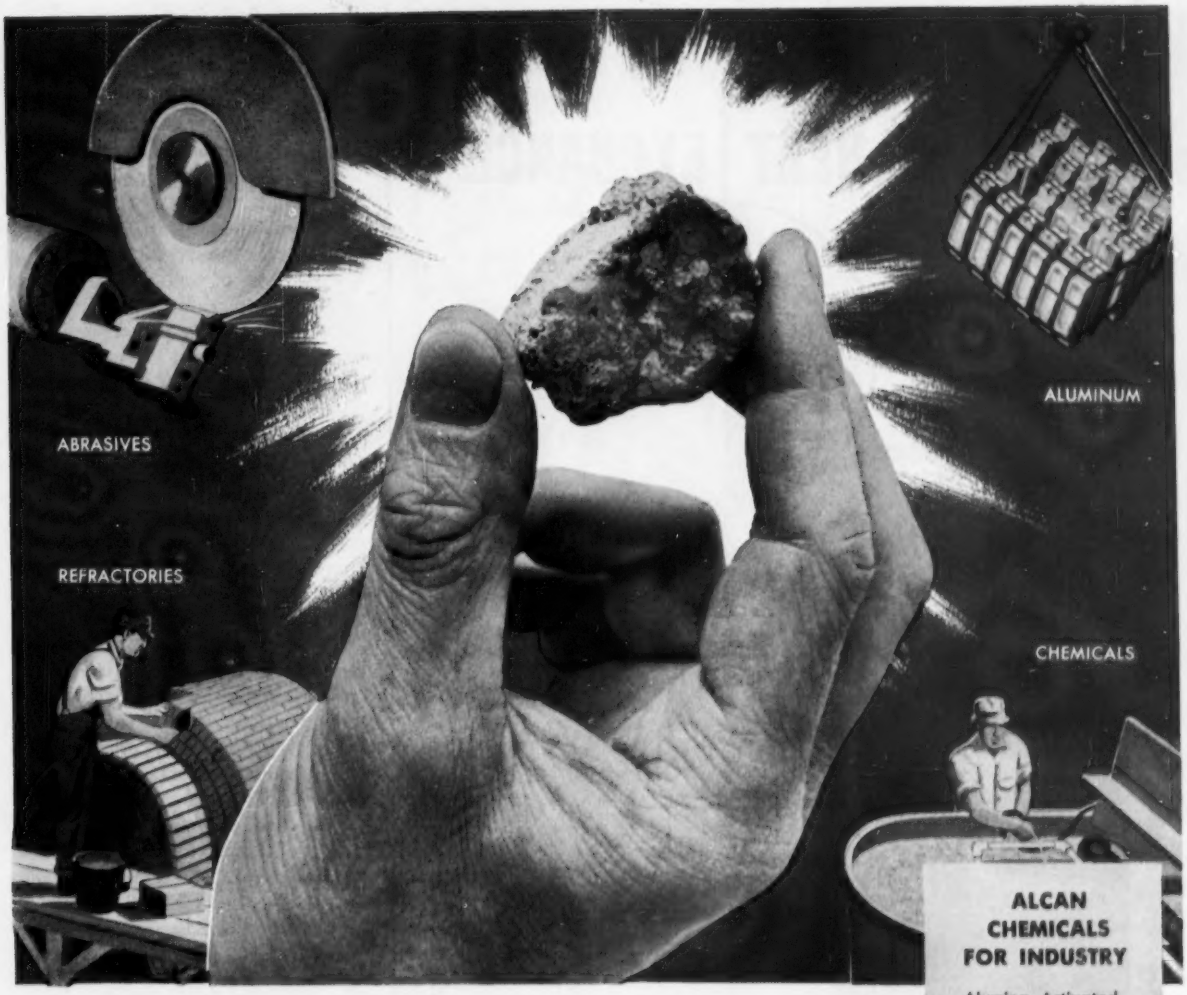
Westward Information Flow

It isn't often that the chemical industry goes abroad for technical assistance. But that's just what it's getting from England's Colonial Products Laboratory. Located in the staid, old Imperial Institute building at South Kensington, London, the lab is working on a wide range of raw-material-utilization studies for American firms, as part of its over-all objective—development of British colonial resources.

• Working with CPL on one current project, analysis of Middle East pyrethrum flowers and pyrethrum extracts, are McLaughlin, Gormley King Co. (Minneapolis), John Powell Laboratories Inc. (New York), Esso Standard Oil Co. (New York), and the U.S. Dept. of Agriculture.

• S. C. Johnson & Son (Racine, Wis.) is showing keen interest in West Indies sugar cane wax extraction. And Morningstar Nicol (New York) is carefully watching the progress of CPL's studies on arrow-root starch production in the West Indies.

Laboratory director R. A. E. Galley and a staff of 71 scientists (chemists, biologists, etc.)—36 of whom are scattered throughout the colonies—are tackling everything from Nigerian Kadanya gum (which has possibilities as a chewing gum base) to African sisal juice (it contains hecogenin, a cortisone precursor) in seeking ways to



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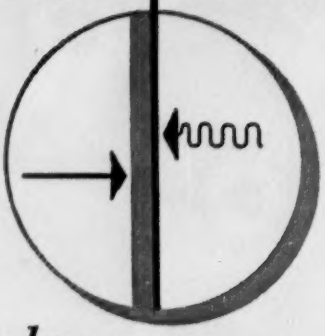

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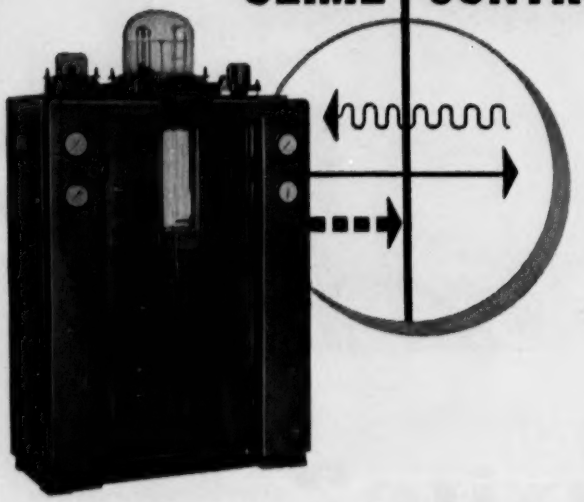

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High on CPL's schedule are three promising papermaking investigations: a sulphate process for Malayan Batai wood, which reportedly yields a pulp comparable to that from sulfate-processed coniferous woods; a sulfate cook that may be used with a mixture of three species of timber (from Kenya) and said to produce a bleached pulp suitable for printing papers; and high-strength paper pulp made from bark ribbons of *Hibiscus cannabinus*, a Nigerian tree.

Other projects: development of flue-cured African Gold Coast tobacco; utilization studies on African reeds and grasses, Nigerian goat and reptile skins, Nyasaland tung oil, Sarawak sago starch, pepper corns from Sierra Leone, and sage from Cyprus.

These exotic vegetable and animal products are sent to CPL by government departments and individuals throughout the various overseas territories. Last year, it performed lab and consultation services in connection with 776 such inquiries, carried out 80 detailed research projects.

Cost of this service runs high, about $182,000/year. The laboratory's outlay for the next 5 years, including a probable move to new and larger facilities, is estimated at $2,240,000.

•

A checklist of this week's new chemicals turned up these hopeful entries.

• Carbide and Carbon Chemicals Co. (New York) is producing acrolein dimer, alpha - hydroxyadipaldehyde, hexanetriol-1,2,6, and tetrahydropyran-2-methanol, expects them to take hold in the manufacture of pharmaceuticals, plasticizers, etc.

• Four rare coenzymes are newly available from Pabst Laboratories (Milwaukee, Wis.): cytidine-5'-monophosphate (CMP), cytidine-5'-diphosphate (CDP), cytidine-5'-triphosphate (CTP), and uridine-5'-diphosphate (UDP).

• Pilot-plant quantities of alkylaniline C-5 (averaging 5 carbons in the ring-substituted alkyl group) and alkylaniline C-12 (averaging 12 carbons) are now obtainable from Monsanto's (St. Louis) organic chemicals division. They're suggested as intermediates in petroleum, agricultural, and pharmaceutical chemicals, are also reputed precursors for isocyanate and thiourea derivatives.

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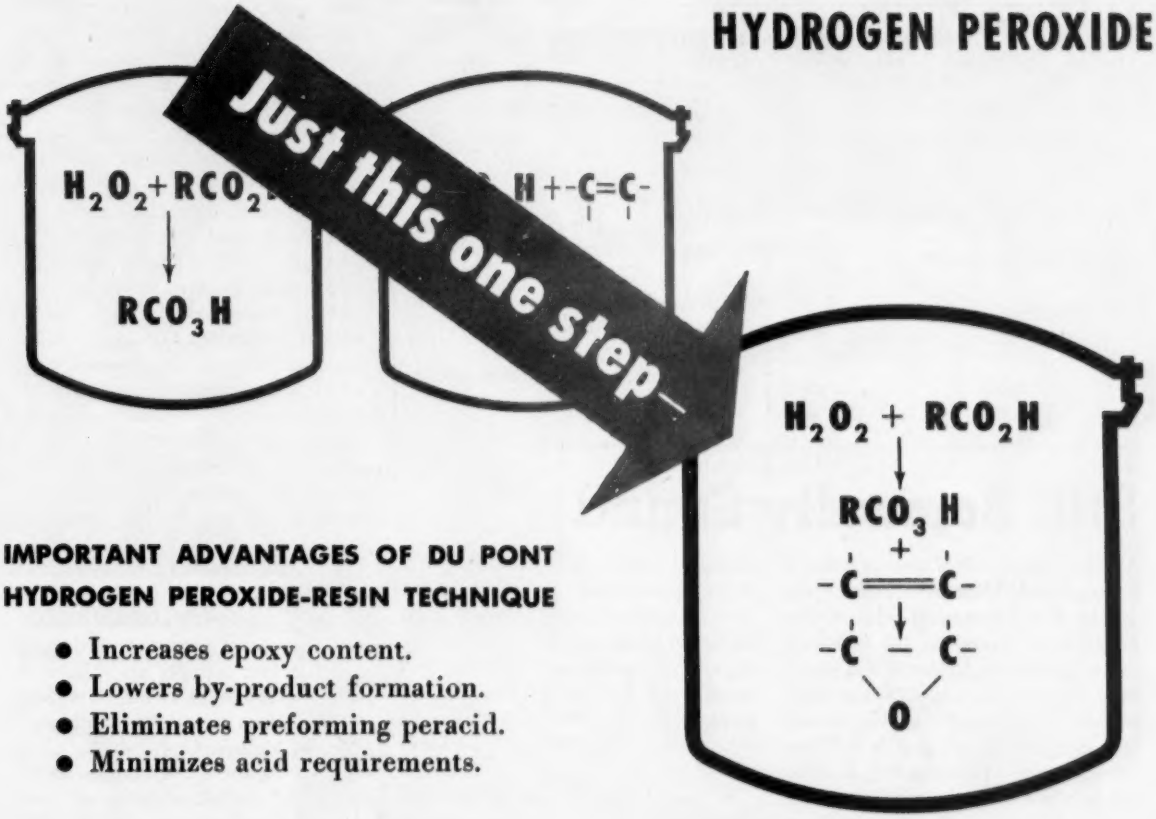

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• Milk homogenization	√ Nondestructive testing in quality control
	√ Promoting difficult emulsifications

Still Basically Sound

As far as the chemical process industry is concerned, ultrasonics hasn't lived up to the extravagant claims that heralded its arrival on the industrial scene. But its few successes and promising possibilities are still attracting process equipment manufacturers. Stepping into the ultrasonics field last month: newly incorporated General Ultrasonics Co. (Hartford, Conn.) and long-established Curtiss-Wright Corp. (Wood-Ridge, N.J.), the aircraft engine manufacturer.

On the other hand, some of the first companies to enter the field have recently stepped out: most notably, Brush Development Co. (Cleveland), which had been doing a lot of the early research on ultrasonics, has now mothballed such projects. Another, Ultrasonic Corp. (Cambridge, Mass.), one of the pioneers of industrial applications of ultrasonics, has switched the direction of its work completely.

In marked contrast with the premature enthusiasm with which early backers overrated and oversold ultrasonics, conservatism is the keynote of its promotion today. Manufacturers freely admit that, except for a few mechanical devices already in use, standard commercial equipment may take 2 to 10 years to develop. Their present approach to new process applications is characterized by methodical thoroughness, cautious optimism.

Process Possibilities: Chances are that ultrasonics won't replace many chemical operations, but it may help to improve several:

• Its intense agitating action is expected to be very useful for dispersing pigments, breaking high polymers and emulsifying liquids. It can, for example, create a stable emulsion of oleic acid in water without the addition of an emulsifier.

• It also looks promising for flavor control in the brewing industry. Mash is exposed to ultrasonic energy at room temperature to extract flavor oils, then at elevated temperatures to obtain the bitters. Ultrasonics releases flavor ingredients from the cells of the hops partly by the destruction of cell walls, but mostly by increasing the diffusion rate through the walls.

• Electrochemical processes stand to benefit from ultrasonics, too. Experimental work on electroplating systems show that high-frequency agitation of the solution surrounding anode and cathode surfaces increases current density, results in faster deposition of metal.

• In the field of quality control, ultrasonics is being used for nondestructive testing. Similar in principle to the underwater antisubmarine devices developed during the war, one type of testing instrument utilizes reflections of high-frequency waves to "see" internal flaws in metals, plastics. Subsurface voids or cracks interrupt the passage of the ultrasonic waves, show up as an interference pattern in the reflected wave. Reflection-type instruments employ a combination transmitter-receiver applied to one surface of the specimen, can also be used to measure thicknesses from one side of a sheet or structure.

• And ultrasonics pays its way in several jobs that just can't be done by any other means. A good example of this is ultrasonic drilling of materials that are too hard or too brittle for conventional machining. The actual cutting is done by fine abrasive particles that are suspended in a liquid flowing around a mandrel. Vibrating at ultrasonic frequencies, the mandrel wears its shape into materials as hard as titanium carbide without producing mechanical shock. And since it does not rotate like an ordinary drill, the device can make intricate cuts, such as square, fluted or even corkscrew-shaped holes.

• Fluxless soldering is another operation that makes good use of ultrasonics' unique abilities. High-frequency energy transmitted through molten solder disrupts oxide films on metal by cavitation, permits unusual unions such as ceramic to aluminum.

Sound Makers: Underpinning all of these applications, of course, are a number of specialized ultrasonic gadgets, tried and untried, and the companies that make them. General Ultrasonics Co., an off-shoot of Rich-Roth Laboratories (Hartford, Conn.),* was formed to manufacture and market the Rich-Roth Model 400 ultrasonic generator and Sonicell transducers. Offering no mechanical instruments, it is concentrating on the development of liquid processing equipment.

Bypassing costly basic research, Curtiss-Wright embarked on its ultrasonic venture with a line of equipment designed and developed by the West German firm of Dr. Lehfeldt & Co. The instruments, all of which have been proved successful in industrial applications, include both types of nondestructive testers (Echoscope, Sonometer) and an ultrasonic drill (Diatron). Also available: a small-parts washer, three fluid processing units for the food field and experimental work.

Worth the Price? There are several means of generating ultrasonic fre-

*Rich-Roth Laboratories was formed by Stanley Rich and Wilfred Roth, who were co-inventors of the Ultra-Viscoson—the continuous and automatic ultrasonic viscometer.

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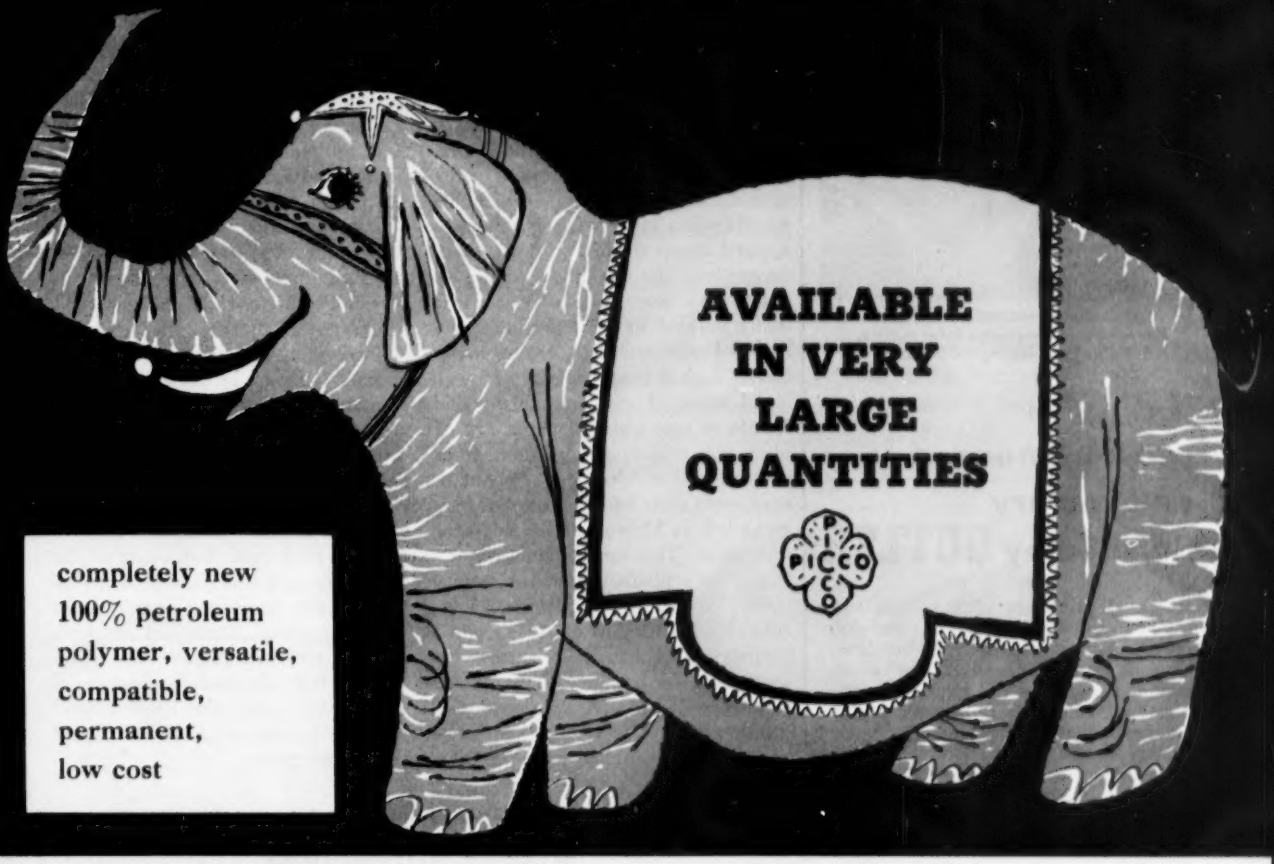

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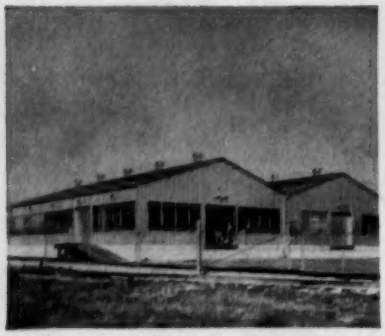

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quencies. Up to about 100,000 cycles /second, mechanical devices such as sirens or whistles can be used to create the vibrations. But the range from 40,000 to 400,000 cps., which experts believe will be the most useful for process work, is handled best by electrical generation.

The most versatile electrical generators employ piezo-electric crystals. Certain natural (quartz, Rochelle salt) and manufactured (barium titanate) crystals have the unique ability to vibrate when an alternating voltage is applied across them. For this type of generation, the ceramic barium titanate has many advantages: it is easily molded to desired shapes, requires lower exciting voltage, withstands higher temperatures.

All types of generators have one hurdle in common: the high cost of ultrasonic power. One manufacturer estimates that electrical generation equipment costs $4-5/watt today, may go as low as $1/watt as development progresses. This might not seem excessive to a pharmaceutical manufacturer processing high-price, low-volume products. But a large chemical company would hardly find ultrasonics economical for handling thousands of gallons of inexpensive materials.

Side Effects: There are other drawbacks, too. Incomplete understanding and the high cost of research have discouraged many from entering the ultrasonics field, driven some of the earliest backers out of industrial development into more rewarding branches of the art. Ultrasonic Corp. (Cambridge, Mass.), for example, pioneered commercial applications with its siren-generated ultrasonic carbon black agglomerator and dust precipitators. The equipment worked, but required constant adjustment by field engineers. Unable to overcome this problem of erratic operation, Ultrasonic Corp. deferred further development and, for the past three years, has devoted its research to underwater and electronic applications.

Too, early attempts were often doomed to failure by the lack of understanding and inability to predict secondary effects. Several years ago, ultrasonic homogenization of milk showed every indication of being successful and economically feasible. It produced a good grade of sweet-tasting, soft-curd milk. But when all the facts were in, it was found that cavitation at the frequency required for homogenization stimulated bacteria growth, and the project was abandoned. But ultrasonics' chances of success—here, as in other applications—continue to improve as knowledge of the science grows.

What is Ultrasonics?

ULTRASONICS is a science dealing with the propagation and transmission of vibrational energy above the upper limit of audible sound (20,000 cycles/second). For more than 25 years, it was little more than a laboratory curiosity. Investigators observed that unusual phenomena were associated with the passage of high-frequency waves through liquids. But only recently has an understanding of the mechanics of these phenomena advanced to the stage where they could be considered for useful applications.

Like audible sound, ultrasonic vibrations travel through a substance as pulsating waves of energy. Particles within the medium are set in oscillation by the forces exerted on them by the waves. And since particle displacement in a liquid is proportional to the intensity of the ultrasonic energy, high-power inputs create considerable agitation.

One of the more spectacular effects of passing ultrasonics through a liquid is the phenomenon known as cavitation. At atmospheric or slightly reduced pressure, cavitation causes vapor cavities to form as tiny bubbles within the liquid. The subsequent collapse of the cavities exerts pressures up to several hundred atmospheres in small localized areas, creates intense destructive forces. Though these effects are generally associated with high-intensity, low-frequency ultrasonics, similar forces are present even in the absence of visible cavitation.

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METHYLSTYRENE PLANT: First Dow, now Cyanamid is adding to the stakes.

Betting on Thermoplastics

Last fortnight American Cyanamid tipped its hand, indicated it was drawing to a full house as it goes ahead with plans to add a methylstyrene unit to its bustling Fortier, La., works (CW Newsletter, Jan. 22). The move also marks Cyanamid's entrance into thermoplastic resins. The ante: a plant, now abuilding at Wallingford, Conn., that will turn methylstyrene from Fortier into 40 million lbs./year of thermoplastic molding compounds.

Underpinning this two-pronged maneuver is a methylstyrene synthesis developed at the company's Stamford, Conn., Research Laboratories. Cyanamid says only that it is a new and patented process "that should result not only in new polymers and copolymers of interest in the plastics field, but also in intermediates that might be useful to other divisions of the company."

It is, however, in all likelihood built around the synthesis first reported in 1945 by a Dominion Tar & Chemical research team. Not only does this synthesis appear to have the versatility claimed by Cyanamid, but it is also the same process that Cyanamid's James Dixon and Kenneth Saunders have been nursing to commercialization (*CW, Oct. 24, '53, p. 41*) at Stamford. Known as the diarylethane process, it permits flexibility of both starting materials and end products. It will be industry's second try at freeing polymer producers from the vagaries of benzene availability. The first, of course, is Dow Chemical Corp.'s $10-million vinyltoluene plant at Midland, Mich. (*see cut*).

Versatility Plus: Unlike the Dow process based on alkylation of toluene with ethylene and subsequent dehydrogenation of the side chain, the new operation takes a different tack, ends up as a more complicated (and more versatile) process. As originally developed, it involves two separate steps: reaction of toluene with acetylene to form ditolylethane; cracking of the ditolylethane to ortho- and para-methylstyrenes and toluene.

In place of methylstyrenes, dimethylstyrene monomers can be made by merely substituting xylenes for toluene in the original reaction. An important by-product of this modification is para-xylene, which can be oxidized to terephthalic acid, used in the manufacture of polyester condensation products (fibers, films, and the like).

Moreover, in the straight methylstyrene operation, acetaldehyde can be used in place of acetylene. But for Cyanamid this would entail an extra processing step, at best. Since the company already has an acetylene unit in operation at Fortier, there would be little point to making acetaldehyde from ethylene, even less in adding an unnecessary detour to acetaldehyde from acetylene.

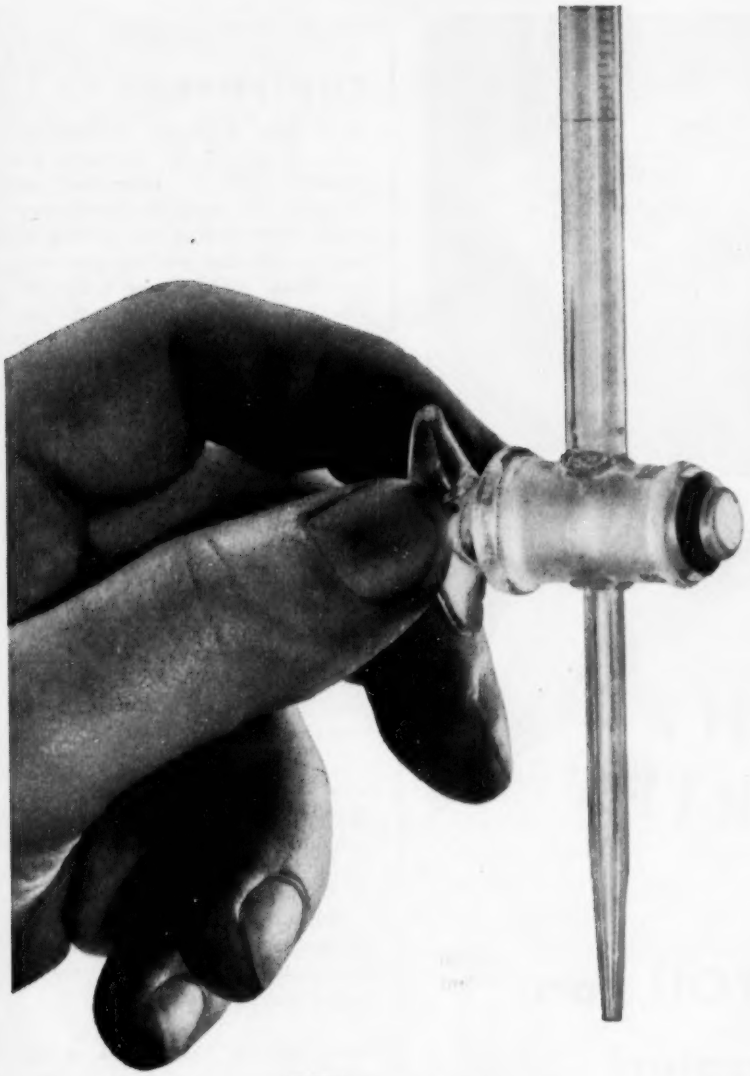
Petrochemical Gamut: The diarylethane process, as defined, points to a petrochemical operation in which toluene (from petroleum sources) would react with acetylene (from natural gas). Indicated location of the new methylstyrene unit, close by Cyanamid's acetylene-from-natural-gas plant, seems to clinch the petrochemical setup.

Such an operation does not appear to introduce drastically new concepts of design, but it does pose some engineering problems:

- Like all processes involving acetylene, rapid reaction rates and concurrent liberation of heat could prove troublesome. In large-scale operation, of course, one answer to this is agitation in tank reactors to disperse the heat.
- Similarly temperature-critical is distillation of the end product. To insure proper performance of polymerization inhibitors, temperatures must be held below 100 C.
- Somewhat more vexatious are the limited conditions for the catalytic cracking of the ditolylethane isomeric mixture. To obtain reasonable conversion with a minimum of objectionable by-products, the operator must determine the proper combination of pressure, dilution, contact time, and catalytic particle size.

Tightly dependent upon this combination of reaction conditions will be the isomeric ratio of the resultant methylstyrene. Starting with acetylene and toluene, the Cyanamid diarylethane process yields a 35:65 ortho-para mixture. The corresponding polymer shows promise as a styrene-substitute in both thermoplastic moldings and low-pressure laminating resins. On top of Dow's output, Cyanamid's entry into the thermoplastic field will doubtless be felt in the styrene market.

While no actual figures have been released, Cyanamid's new methylstyrene works, however, is figured to be somewhat smaller than Dow's comparable unit. Best estimate to date (based on an Office of Defense Mobilization expansion certificate) pegs capital costs of Cyanamid's methylstyrene unit at close to $8 million.



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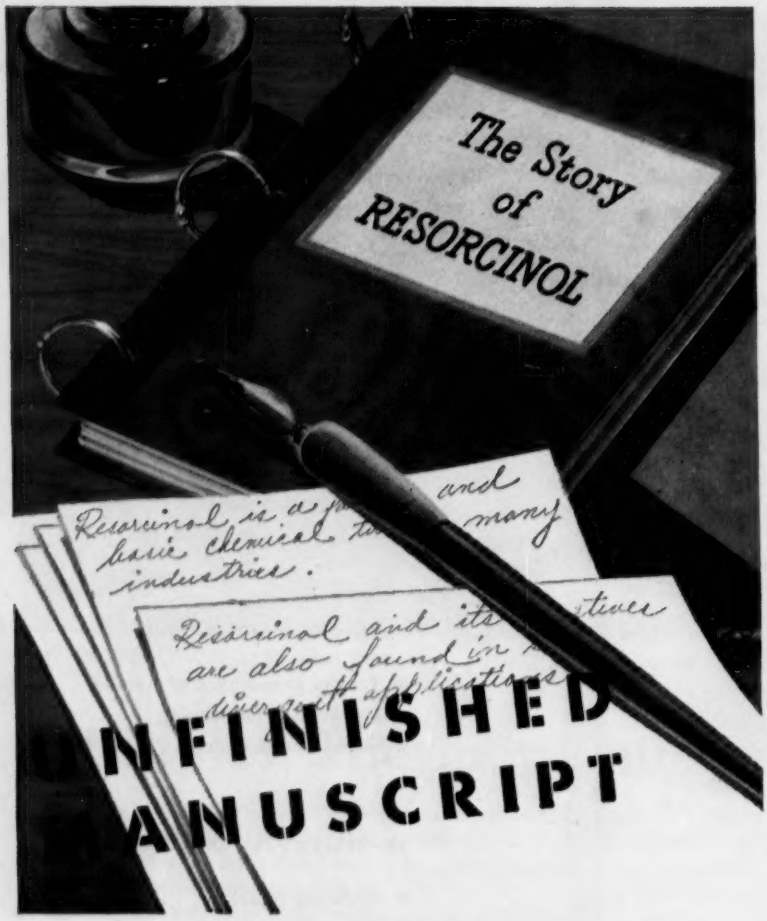

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EQUIPMENT

Shaft Seals: Chempro "wedge-lock" seals, developed by Chemical and Power Products, Inc. (New York), are designed for complete interchangeability with stuffing-box packing on pumps and other rotating processing equipment. Sealing faces located inside the stuffing-box eliminate the possibility of spray leakage. Suitable for use with most chemical liquids and slurries, the seals are available in standard shaft sizes for a wide range of operating conditions.

●

Threadless Valve: For ease and speed of cutting into tubing lines, Autoclave Engineers, Inc. (Erie, Pa.) has developed TubeLine valves that require no beveling or threading of the tube. A precision-machined adapter forms a gas-tight seal that will hold pressures up to 4000 psi. Valves are made of stainless steel, in four sizes for ⅛- to ½-in. O.D. tubing.

●

Level Control: Auburn Spark Plug Co. (Auburn, N.Y.) now offers a series of high-pressure electrodes for controlling liquid level at pressures to 4000 psi., temperatures to 800 C. Featuring a high-strength aluminum insulator, the new electrode is expected to replace many of the old-style mica-insulated controls now in use.

●

Purity Control: Up to 99% of the carry-over can be eliminated, says the V. D. Anderson Co. (Cleveland, O.), in evaporators equipped with its HieF purifier. Installed at the outlet of the vapor chamber, the unit removes entrained particles by a new principle of controlled centrifugal force. Employing no filters or moving parts, the HieF purifier assures automatic operation, eliminates cleaning and servicing requirements.

●

Canned Pumps: To meet the process industry's growing demand for sealed-rotor pumps (*CW, Feb. 6, '54*), Chempump Corp. (Philadelphia, Pa.) has added 5- and 7½-hp. models to its standard line. Available in standard construction for service to 450 F., 150 psi., the new series handles capacities to 300 gpm. at heads to 195 feet.

●

Explosion Snuffer: Now that its Fireye explosion extinguisher has been re-

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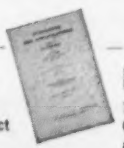

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Big Business is Water-Borne in Malaya...

112 cells of 42" Dorrco P-A Jigs handle primary circuit tin recovery on this Malayan dredge. At right — a 42" two cell Dorrco P-A Jig.

Placer tin mining is big business in Malaya — source of better than a third of total world production. And dredging for the tin-bearing matrix is a big tonnage operation. For instance, the 304' dredge pictured above can dig 480,000 cubic yards per month from 130 feet below water level.

The bucket line discharges matrix to a trommel screen where oversize waste is separated from minus ⅜" feed for further processing. First step, and point of maximum tin concentration — fourteen batteries of Dorrco P-A Jigs, each comprising eight 42" x 42" cells. These units are compact and light in weight — important considerations in water-borne operations.

Tin recovery in Malaya may be of academic interest only to you. But, if you have problems involving any phase of the separation of finely divided solids in suspension — or ion-exchange — or fluidizing techniques . . . chances are that our worldwide organization can help you.

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PRODUCTION. . . . .

leased for non-military use, Electronics Corp. of America (Boston, Mass.) is preparing to market it on a broad industrial scale. Originally developed to suppress explosions in airplane fuel tanks, the Fireye detects first sign of flame in combustible liquids, acts instantaneously to smother it. Heart of the device is an infrared-sensitive photo cell which senses start of combustion, detonates a plastic container of volatile extinguishing liquid.

•

Controlled Heat: Process temperatures to 750 F. can be controlled to plus or minus two degrees, claims International Boiler Works Co. (East Stroudsburg, Pa.), by the use of its International-LaMont thermal liquid heater. Forced recirculation assures maximum heat absorption, prevents fluid decomposition and tube damage from overheating.

•

Gentle Check: Closure without "slamming" and minimum flow resistance are features of a unique spring-action check valve manufactured by the W. R. Ames Co. (San Francisco). A mechanical knuckle joint multiplies spring pressure to close the valve before reverse flow slams it shut, reverses its action to overcome spring pressure on reopening. Positive action permits efficient operation in any mounting position, prevents hammering and chatter.

•

Rigid PVC: Long touted for its superior corrosion resistance and chemical inertness, unplasticized polyvinyl chloride is now being molded economically by a technique developed by Stokes Molded Products Div. of the Electric Storage Battery Co. (Trenton, N.J.). Better than stainless steel for many process applications, unplasticized castings are said to have greater chemical resistance and mechanical strength than PVC containing fillers and plasticizers.

•

Exchanger Switch: Reversing the conventional function of heat exchangers, Heil Process Equipment Corp. (Cleveland, O.) has adapted its Nocordal exchangers to unusual cooling services. Cork insulation, forced flow, and high heat transfer coefficient of Nocordal impervious graphite team up to provide efficient operation with less cooling surface than immersion-type coils require.

Dowicide Preservative

cuts building costs by opening dramatic new uses for insulation board

Popular cellulosic materials are protected against rot, mildew and termites by the addition of Dowicide 7 (PENTAchlorophenol)

Building board, treated with Dowicide Preservative by manufacturer to help prevent deterioration from mold, mildew and termites, here cuts costs greatly by doubling as sheathing and exterior finish.

Examination of the samples above tells you what's happened to insulation board. They are identical in all but *one* vital respect: piece at *top* was treated by manufacturer with Dowicide® 7, one of Dow's fourteen effective industrial preservatives. Exposure to severe use conditions shows *treated* sample *completely free* of rot and mildew that are well on the way to deteriorating the *untreated* board.

In addition to lowering maintenance expense, Dowicide-treated insulation board cuts material and labor costs through its easy, fast installation as sheathing, lath, shingle backer, siding, roof insulation, interior panels and other applications.

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BYPASSING THE PLUMBER: A tablespoonful of caustic helps the housewife.

Chemicals Clear the Way

Though two chemical compounds grab most of the $25 million spent yearly to keep drains and toilets clean, there's room for new-type products.

Abrewing now in the Chicago offices of Ivano, Inc. is a new sales campaign. It's for Ivano's drain clearing compound called Plumite, and with it Ivano hopes to readjust the profit split in the $15-million business of drain clearing compounds.

The market has long been dominated by Drackett Chemical Co.'s Drano, but Ivano, with a product already established as a major seller in the Midwest (it was formerly made by Dearborn Chemical), hopes to challenge that record. Its big gun: a solemn TV commercial that shows how fast-acting Plumite can churn its way through a glass sink drain completely plugged with soap curds and hair.

Mundane as such an operation is, it carries an important message to the housewife who can't afford to call a plumber, and assures business for the literally hundreds of firms that offer drain cleaners of one sort or another.

Old Faithfuls: Just as important to the average housewife are the companion products to drain solvents—the toilet bowl cleaners. There's news here, too. Sani-Flush, which claims to take 60% of the market for products of this sort, features a new formulation and a new package:

- "New fast-acting formula." It's 82½% sodium bisulfate, 1% oxalic acid, and 16½% inert ingredients (including a perfume). This replaces an old mixture of 80% sodium bisulfate, 15% sodium chloride, and 5% steatite.
- Easily opened top. The current package replaces the stock can with a fricion-fit, pry-off lid that dates (by Hygienic Products Co., Canton, O.) back to the introduction of Sani-Flush 43 years ago. Innovation: a polyethylene snap cap covering a 1-in. orifice. It's simple to open, easy to replace.

There's not much doubt in the trade that the big change in Sani-Flush was forced by Judson Dunaway Corp.'s (Dover, N.H.) Vanish. Vanish, generally placed No. 2 in this $10-12-million field, has a built-in lid-lifter. It was also perfumed before Sani-Flush.

Why Change? One of the most amazing things about these two profitable fields is that there has been virtually no change in product formula over the years. All the top selling solvents, for example, are based on sodium hydroxide, sometimes with the help of aluminum filings. This saponifies grease, acts on the insoluble soaps formed in hard water areas.

As a result, the cleaners are simply made, and are often sold only locally. "Every tank town has its small mixer," one manufacturer told *CW*.

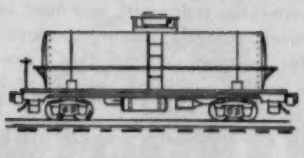
Despite its numerous competitors, Drackett asserts Drano outsells all other drain cleaners combined, has "at least 51%" of the market. Among its larger competitors is B. T. Babbitt, Inc., which sells caustic drain cleaners under 15 different tradenames (acquired as it bought out various packagers across the nation).

Dearborn Chemical, a well-known Midwest chemical supply house, claimed some regional superiority with Plumite, but apparently felt that Ivano, a major producer of vinyl synthetic sponges, was in a better position to sell Plumite retail. Judson Dunaway, besides selling Vanish, makes a drain cleaner for national distribution called Elf.

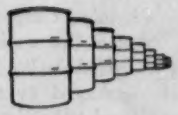
Almost all the powder-type toilet bowl cleaners are based on sodium bisulfate. This includes Climalene Co.'s (Canton, O.) Bowlene, as well as Sani-Flush and Vanish.

Liquids, Too: Also frequently used for toilet bowls are various scouring powders, bleaches, and pine oil products. Liquid products are often used institutionally—they are basically an inhibited hydrochloric acid, sometimes with a quaternary ammonium com-

AVAILABLE IN



TANK-CAR AND



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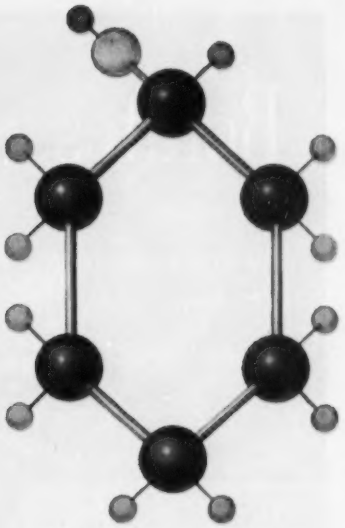

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TEXTILES: Stabilizer and homogenizer in textile soaps; stabilizer for emulsions; solvent for dyes; kier boiling assistant.

FINISHES: Solvent in lacquers, shellacs and varnishes; high boiling solvent in nitrocellulose lacquers to retard evaporation and prevent blushing.

METAL: Degreasing agent; solvent in metal polishes.

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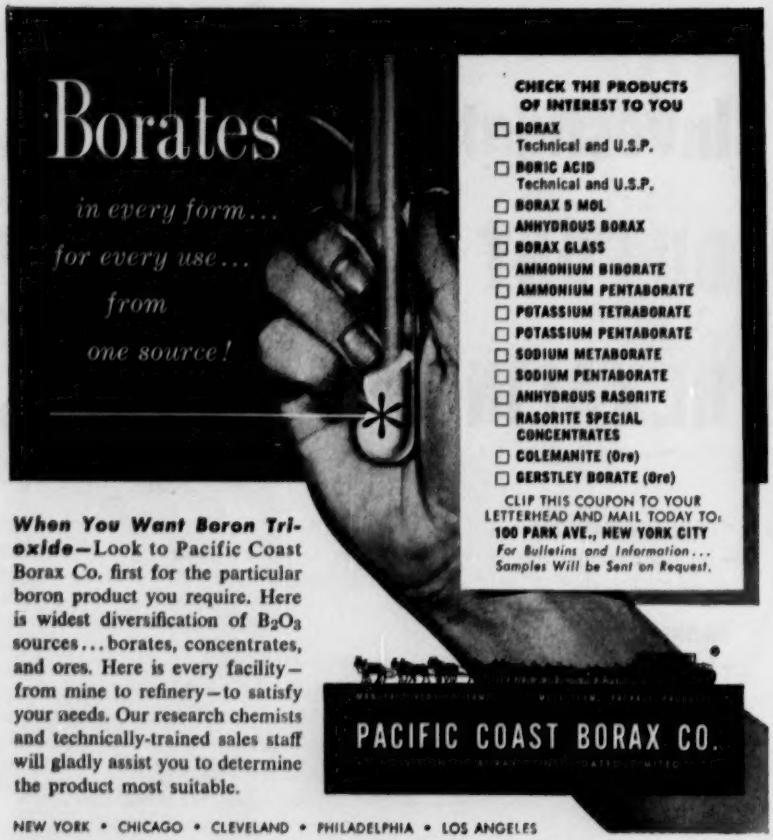

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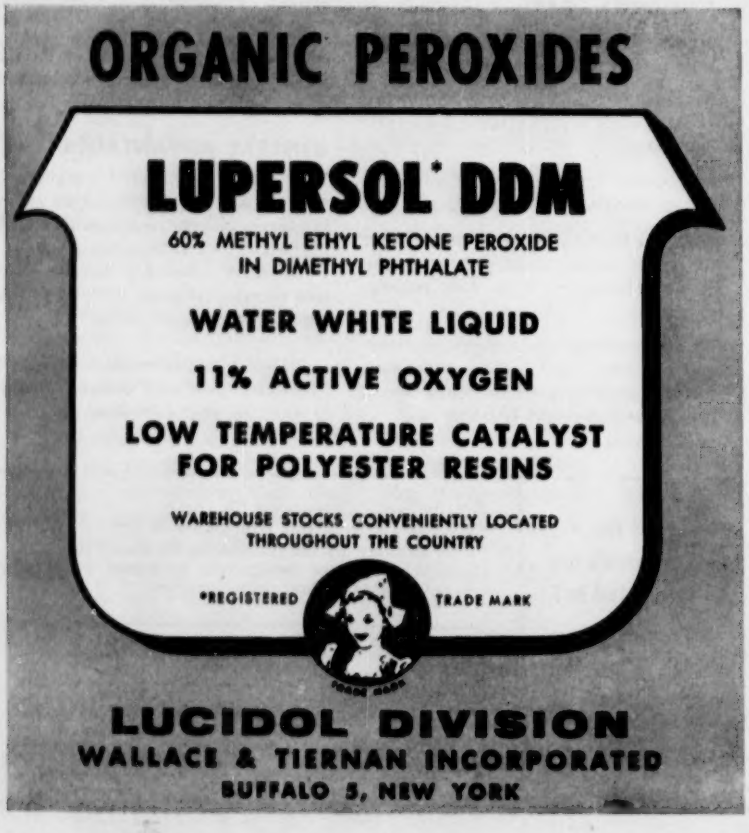
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pound that serves as disinfectant and deodorizer. Typical: U. S. Sanitary Specialties' (Chicago) Kleenable.

Based as they are on sodium hydroxide and sodium bisulfate, these cleaners are poisonous, and must be so labeled. Clearly, there is room for safer compounds (and that's one of the selling points of the biocatalytic agents, *CW, April 17, '54, p. 72*). It is also necessary, however, to keep the price within the 20-30¢/can range. So chances are that '55 will bring no products to upset the firmly entrenched old faithfuls.

Can-Packed Ammonia

Sunlight Chemical Corp. (Phillipsdale, R.I.) surprised the trade last week when it unveiled its liquid household ammonia packaged in a metal container. Claimed to be the first product of this sort so packed (Babbitt, however, is selling a powder form of ammonia, Am-O, in a can, *CW, Sept. 18, '54, p. 64*), it is currently being distributed in a limited Eastern area.

The container, holding 22 oz., is the same sort Lever and Los Angeles Soap Co. Inc. use for their liquid detergents. Made by American Can Co., it is tinless, lined with a two-part organic coating, and has a nondrip, aluminum spout. It is cemented, rather than soldered, and lithographed.

Sunlight is selling "super" ammonia for 25-29¢/can. This puts it somewhat higher (per ounce) than most liquid ammonias (typical: "locals," 15¢/qt.; "nationals" 17¢/qt.). Its bet: light weight and break resistance will overshadow the price differential.

Word of Caution

Pacific Northwest ag chemical producers last fortnight heard U.S. Public Health Service Dr. William Upholt put the responsibility for safe use of insecticides directly at their feet. Among his suggestions: state toxicity of an insecticide in all advertising literature, stop—and this was aimed particularly at chemical salesmen—terming one product safer than another.

And, citing the deaths of five children in Pacific Coast states in accidents involving organic phosphates, Uphalt warned, "If you don't do something about it, someone else will."

GET DOWN LOW

WITH NEW G-B LOWER COST FLAKERS!

This type G-B Flaker, with slight modifications can be incorporated into your processing for continuous or batch-wise flaking of resins, fatty acids, waxes, insecticides, sulphur, and other organic materials.
4' diameter by 10' face, spray cooled chrome-plated steel drum. Designed for approximately 5,000 pounds capacity per hour. Equipped with pan levelling device to facilitate cleaning. Stainless steel discharge conveyor. Adjustable scraper blade. Simplified level control on pan. Variable speed drive, 3 RPM through 9 RPM range.

We can point to many instances where new, low *first cost* G-B designs have resulted in lower overall product flaking costs, too. This double-barrelled economy in flaker equipment design deserves *your careful re-examination* of your flaking costs as a means of product conversion. Phthalic anhydride, sulphur, benzene hexachloride, caustic, and resins of all types can be efficiently and economically processed by G-B flakers.

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CHRIS GRUBB

GREEN CROSS'S CARTER: In Canada, he wants Green Cross to symbolize "first."

Preferred Spot—Number One

With 10 years of vigorous merchandising now behind it, Green Cross Products (division of Sherwin-Williams Co. of Canada, Ltd.) has pretty well settled on its modus operandi—it strives to offer novel products first. Introduction in 1945 of Barnspray containing DDT is illustrative of the Green Cross idea. It was the first DDT spray sold to civilians in North America. An up-to-the-minute example: Green Cross is now starting to sell in Canada the new fly-killing lure, Fly Charmer, which Pittsburgh Coke and Chemical put on the U.S. market just last month *(CW, Jan. 29, p. 84)*.

This striving to be in the van has netted GC another No. 1—it claims the largest share of Canada's $17-million pesticide market (includes both home and farm sales).

Four to Please: Part of the enterprise's success stems from the distribution setup it has had from the start—the access to Sherwin-Williams' long-established outlets. Thus, GC is retailed in the stores that carry Sherwin-Williams' and its affiliates' (Canadian Paint Co., Ltd.; Lowe Brothers Co., Ltd.; Martin-Senour Co., Ltd.)—paints.

The fact that four different paint companies sell Green Cross products is one reason the brandname was selected; it is not obviously linked to any one of the four. Moreover, it is a simple, easily remembered symbol, and isn't restrictive as to product.

Now, for example, the green cross is found on insecticides, herbicides, rodenticides, sun tan lotions. The simply designed, boldly labeled packages are found not only in S-W stores but also in paint, hardware and variety stores throughout Canada.

Farm Touch: Although Sherwin-Williams was once a firmly established name in pesticides in the U. S. (with lead and arsenic compounds), it has since withdrawn from the consumer arena here. In Canada, however, under the shrewd leadership of GC's general manager, Arthur Carter, S-W has strengthened it position.

Since 1945, when it introduced 15 new products in one year, Green Cross has built a line of nearly 60 items. Of these, 34 are packed for household use, the rest for agricultural application. Currently, sales are split about 50-50 between home and farm.

Carter keeps a close watch on packaging. His products are generally put out in containers (preferably square based), lithographed in five colors. They bear a plain, descriptive title for the most part (e. g., Tomato Dust, Slug Bait, Bug Killer). But Carter also tries new ideas—aerosol packaging is finding increasing favor, and the self-spraying cardboard cylinders for dusts are popular.

Broad Buyer: As a formulator, Green Cross buys raw materials both in the U. S. and abroad. It is also the Canadian representative for such familiar tradenamed formulations as Carbide's Crag 341 herbicide.

It isn't without sharp competition. Chipman Chemical, Du Pont, and Niagara Chemical (division of Food Machinery and Chemical) are among its closest rivals. With the growing ag chem market in Canada's vast western wheatlands, however, there's room for all.

•

Of Industry Interest: Among the new materials aimed at specialties makers:

• Epoxy Resin Water Emulsion, 40% epoxy solids, has been introduced by Chemical Products Corp. (West Paterson, N.J.). It's suggested for protective coatings, floor polishes, adhesives, and the like. It can be blended or compounded with most other resin emulsions and plasticizers.

• Petronauba D is a new emulsifiable microcrystalline wax marketed by Bareco Oil Co. (Tulsa, Okla.). Bareco recommends it for liquid floor polishes, as a replacement for more expensive natural waxes. It is claimed to have good penetration temperature characteristics, achieved by removal of the tacky wax fractions.

• MG-601 is a rust-inhibiting phosphate coating made by Man-Gill Chemical Co. (Cleveland). The compound is devised to promote better paint adherence on appliances, automotive parts and similar parts.

• A blend of phthalate plasticizers is now being sold by Pittsburgh Coke & Chemical Co. The company combines its decyl butyl phthalate and isooctyl decyl phthalate to produce a plasticizer that can be substituted for DOP at lower cost.

• Santopoid 44 is an additive worked out by Monsanto for gear lubricants. It has been incorporated in the greases for the current high-horsepower automobiles with good results, Monsanto says.

• Perma-Skin Epoxy Coatings and Denflex Plastisols have been added to Dennis Chemical Co.'s (St. Louis) line of industrial finishes. Perma-Skin is an air-dry finish, the Plastisol is a baked coating.

•

Medicine Chest: Lederle Laboratories

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*Please note: BURNOK paint vehicles are patented products of the T. F. Washburn Co., Chicago, Ill. and are not offered for sale by General Mills.

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*Du Pont's trade-mark for its polyester fibre

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is now selling Methotrexate, a folic acid antagonist for treatment of leukemia in children.

• Ciba Laboratories is now making commercially available its oral non-barbiturate sedative, Doriden. It is claimed to produce rapid onset of sleep, give little "hangover."

•

Farm Bound: Coming up for spring marketing are a number of new products for the farm and garden. On the way:

• Du Pont's new seed protectant and fungicide, Delsan AD. It is a combination of Arasan (active ingredient, thiram) and dieldrin, and is suggested for treating beans, seed corn and pea seed.

• Another Du Pont product for farm use is an anti-oxidant tagged DPPD. Added to poultry feed, it prevents the feed from oxidizing or becoming rancid, and may prevent "crazy chick" disease (chick encephalomalacia). Chemically, DPPD is N, N'-diphenyl-p-phenylene diamine.

• Monsanto recently showed off its latest pre-emergence herbicide. Based on 2-chlorallyl diethyldithiocarbamate (CEDC), it is said to control weedy grasses.

• Science Products Co., Inc., (Chicago) is now packaging in aerosol containers its tomato hormone, Blossom-Set. The compound, in 12-oz. cans, sells for $1.79.

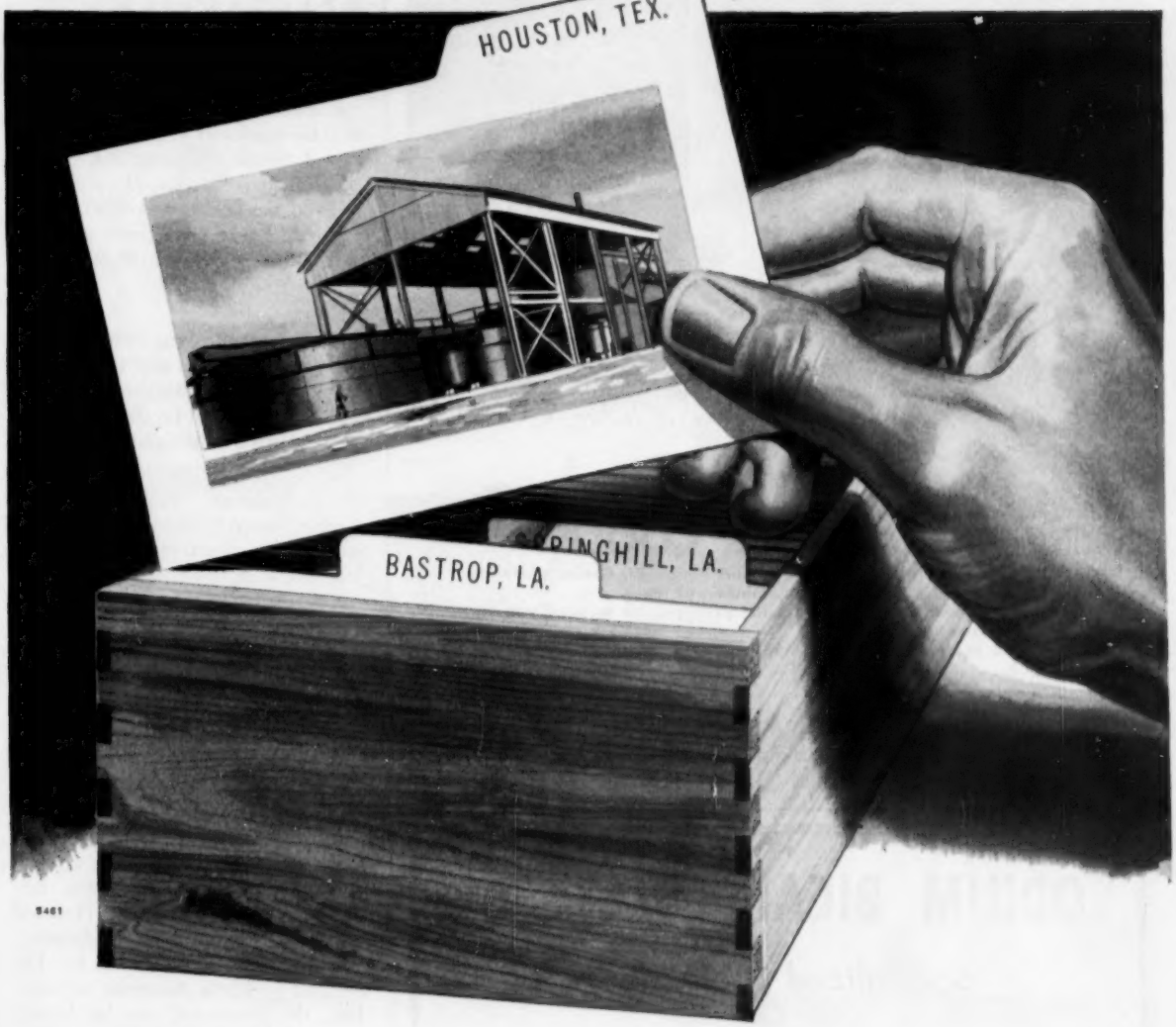
•

Good Year: A couple of specialties companies report that '54 was a particularly profitable year:

• Rayette, Inc. (Minneapolis) says it has continued its sales growth at the 15%/year rate it has maintained the past 10 years. Rayette, maker of professional beauty shop chemicals,

Chemicals Aid in Reconstruction

IT'S SMALL-SCALE, hand work—not much by U.S. standards—but chemical pest control is playing a vital part in the rebuilding of Korea. As promoted by the United Nations Korean Reconstruction Agency, spray equipment and insecticides—DDT, BHC for the most part—have been sent to the Far Eastern nation to boost crop output and improve the quality of food so produced. Recent government estimates put rice output at 75-80 million bu. for '54, a slight increase, and a summer grain yield of 45 million bu., a 30% boost.



A new source for Consolidated Alum . . .

To answer the rapidly increasing demand for aluminum sulphate in the industrial Southwest, Consolidated has recently completed this alum liquor plant at Houston.

The plant is the first of its kind in Texas; it incorporates all the applicable advances in efficiency and quality-control which Consolidated has developed in its 75-year history. For only one example: The plant gets its sulphuric acid from the company's unique acid regeneration units which produce new white acid from what was formerly waste sludge.

Other large alum plants are strategically located at Bastrop and Springhill, Louisiana, where Consolidated has long produced this important industrial chemical.

Used as a filtering agent in Houston's new surface water system, Consolidated Alum is vital also in treating raw water for industrial use . . . as a fiber binder in paper-making . . . and in many other industrial processes.

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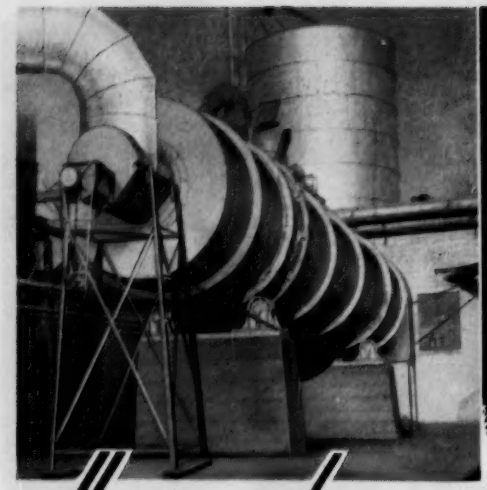

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plans to build two new buildings in Minneapolis for the manufacture of cosmetic chemicals. About 150 people will be employed at the new plant.

• Lakeside Laboratories, Inc.'s (Milwaukee) annual accounting showed the firm netted $293,429, representing a 16.7% increase over '53's net. Gross sales were $5,506,214, a 10% rise.

•

Add Detergent: Mona Industries, Inc. (Patterson, N. J.) is now selling a new alkylolamide synthetic detergent. Light yellow, and said to be almost odorless, it is marketed as Monamine ADD-100.

•

Rust Remover: Judson Dunaway Corp. (Dover, N.H.) is selling Delete to remove rust and stains from porcelain or tile. A 12-oz. metal, shaker-top can retails for 23¢.

•

Controlled Sudser: Essential Chemicals Co. (Milwaukee, Wis.) has brought out a controlled sudsing detergent that it calls April. It's recommended for automatic washers, sells for $4.95/a 20-lb. carton, $10.95/a 50-lb. drum.

•

Coat and Cast: For coating ignition systems, waterproofing wiring harnesses, and encapsulating electrical parts, Radar Relay, Inc. (Los Angeles) is now selling Micro Lite ML 88. Developed by North American Aviation, Inc., the compound can be brush-, spray-, or dip-applied. Mixed with a catalyst before use, it dries to the touch in four hours, polymerizes in about two weeks.

•

Prophylactic Chew: One way to fluoridate your teeth: chew fluoride-containing gum. Frederick Merckel and Laszlo Reiner have worked out just such a gum (U.S. Pat. 2,700,012 assigned to Wallace & Tiernan), making it with a soluble fluoride that provides the alleged decay-preventing effect.

•

Sweet Lube: For engine crankcase lubrication, California Research Corp. (San Francisco) researchers have developed a sugar-containing oil to inhibit deposit formation (U.S. Pat. 2,700,022). Additive (4-10% by weight) is pentose, hexose, or sucrose, on which some of the hydroxyl groups are esterified with an aliphatic carboxylic acid.

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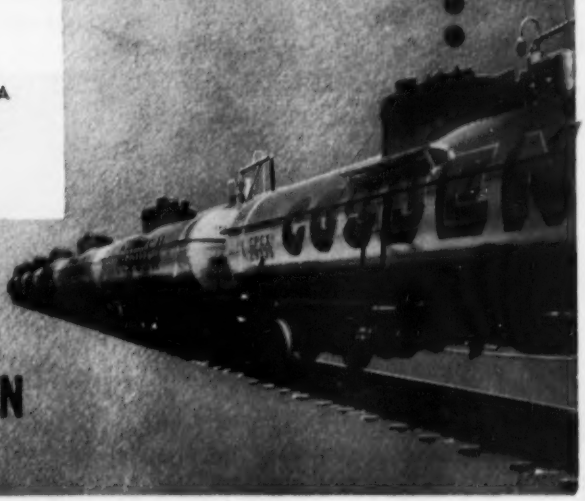

ORGANIC CHEMICALS DIVISION

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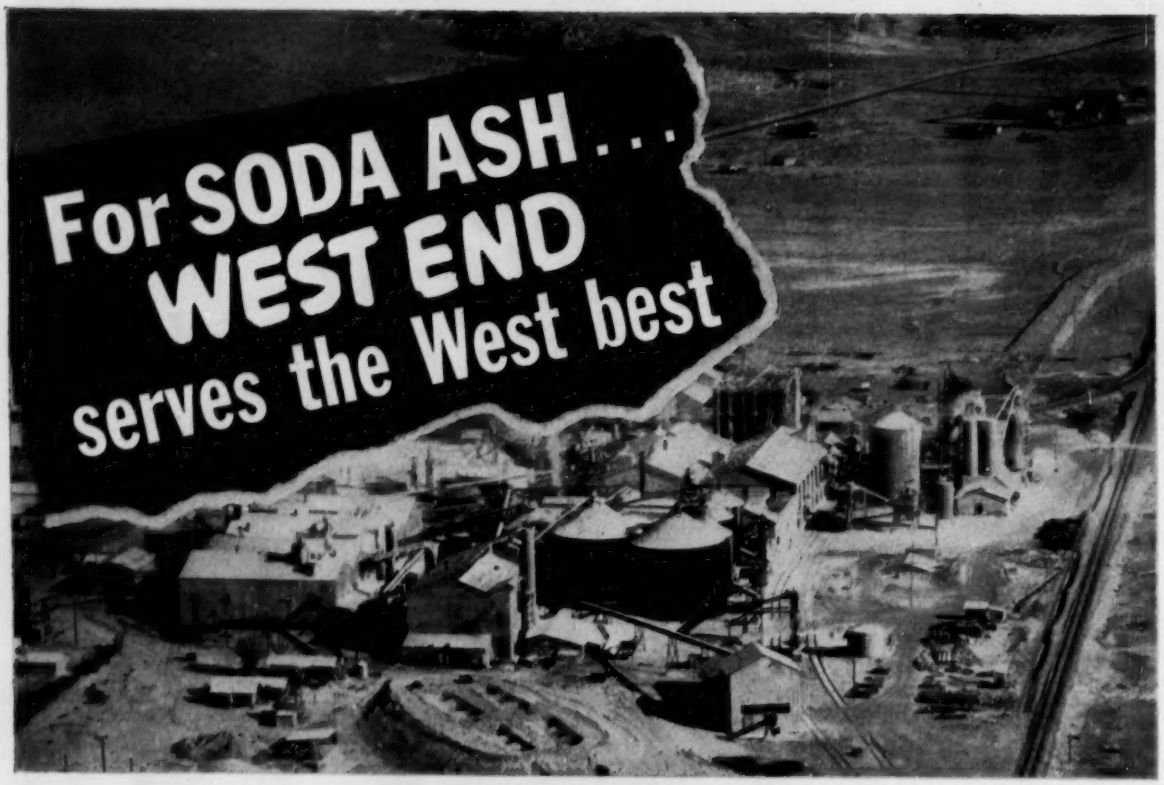

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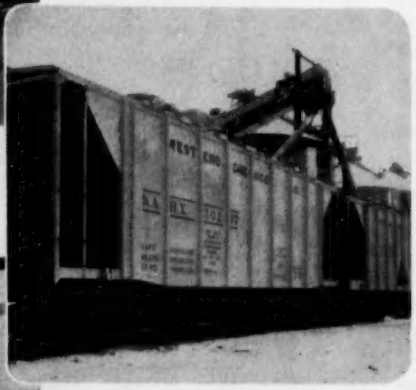
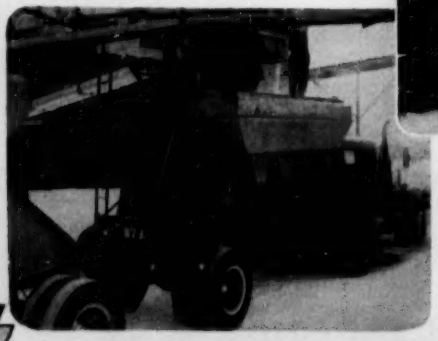


IMMEDIATE SHIPMENT to customers throughout the West in company's own leased hopper cars . . . ready at all times.



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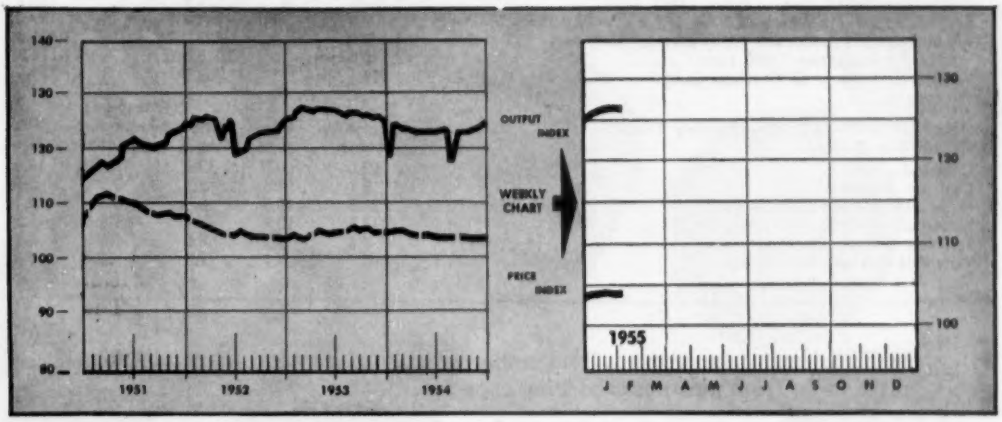

CW Index of Chemical Output—Basis: Total Man Hours Worked in Selected Chemical Industries
CW Price Index—Basis: Weekly Prices of Sixteen Selected Chemicals

MARKET LETTER

Most charitable comment on the hydrochloric acid market this week: demand, though apparently firming up in some sections of the country, is still far from strong enough to balance over-all output. Sore spot, of course, is the acid's by-product status. Production of pesticides and a few other chlorinated hydrocarbons, for example, is now running at a higher rate, thus contributing to the acid backup.

And word is that some synthetic and Mannheim process producers are curtailing production by these methods, but pessimistic trade followers opine that efforts in this direction will not likely help the situation too much.

On the other hand, one hydrochloric acid seller reports a noticeable pickup in sales in the Northeast and Middle West, but concedes that in the Southeast and Southwest they're soft.

Despite the out-of-kilter supply/demand condition—and some instances of price shading—chances are major makers will maintain list prices for the nonce.

•

There's a different story on phthalic anhydride. Few observers will disclaim the fact that the market is tight, and getting tighter. A combination of factors is behind current pinching. Here are three: a step-up in calls, especially from alkyd resin and paint outlets (first noted early in December); not quite enough phthalic raw material naphthalene available at the moment *(CW Market Letter, Jan. 1)*; some scare buying by phthalic users.

Concerning the latter, some talk in the trade harks back to the recent naphthalene advances, with the implication that phthalic—as has happened in the past—will also be jolted upward. Fact is, there seems to be little likelihood that higher prices will be posted right away. Too many antihike forces in the wind.

For instance, very little phthalic is sold on spot; most major consumers are protected via quarterly contracts. Hence, any increase—if it should come—wouldn't go into effect before April 1. By then there's a good possibility that phthalic sellers will be out of the woods on most counts. There'll be additional naphthalene from increased steel-coking operations;

WEEKLY BUSINESS INDICATORS	Latest Week	Preceding Week	Year Ago
CHEMICAL WEEK Output Index (1947 =100)	126.6	126.8	123.7
CHEMICAL WEEK Wholesale Price Index (1947=100)	104.4	104.4	105.0
Bituminous Coal Production (daily average, 1000 tons)	1,473.0	1,423.0	1,401.0
Steel Ingot Production (1000 tons)	2,110.0 (est.)	2,070.0 (act.)	1,774.0
Stock Price Index of 13 Chemical Companies (Standard & Poor's Corp.)	368.1	363.3	271.3

MONTHLY INDICATORS—Foreign Trade (Million Dollars)	Exports Latest Month	Exports Preceding Month	Exports Year Ago	Imports Latest Month	Imports Preceding Month	Imports Year Ago
Chemicals, total	86.1	93.0	69.9	17.6	16.9	19.5
Coal tar products	6.6	6.7	4.6	2.6	2.5	2.7
Medicinals and pharmaceuticals	20.2	24.5	19.5	0.5	0.3	0.4
Industrial chemicals	13.1	12.3	10.1	4.6	5.0	5.5
Fertilizer and fertilizer materials	5.5	6.8	3.7	8.6	6.8	7.3
Vegetable Oils and fats, inedible	4.1	6.7	5.1	7.2	7.8	6.6

possible easing in demand from some phthalic users; and more phthalic production from now-nonproducing capacity.

•

That more coke chemicals are on the way is borne out by the steel industry's latest look ahead. Just this week *Steel Facts* (the American Iron and Steel Institute's publication) predicts higher output for '55. The estimate: nearing or exceeding a 100-million-ton total.

A sharp rise in production during the final quarter of '54—which concomitantly padded the coal aromatics market—is one factor behind the optimism for more steel this year. Actually, expansions and improvements during last year have raised U. S. steelmaking capacity by almost 1.5 million tons. And there's more coming. Advance estimates place the '55 tab for expansion at about $695 million.

•

Another metal-chemical relationship continues to manipulate some market prices. The copper increase (*CW Market Letter, Feb. 5*) is behind several currently higher copper chemical quotations. Latest to be hiked: copper hydrate. The material, for delivery in the East, is up 3¢/lb. to set a new c.l. tag of 43¼¢.

Earlier last week copper sulfate monohydrate was increased by $1.15/cwt. to boost the going price to $18.25. (c.l., f.o.b. works). Copper chloride, too, both crystals and anhydrous, felt the pressure of more expensive metal; new truckload tag on the former is 27½¢/lb., compared with a previous 25¢; the anhydrous asking price, now 41½¢.

•

Aim of an upcoming Washington meeting is to prevent a market disrupting. Business and Defense Services Administration's Chemical and Rubber Division, on request of a number of Midwest sulfuric acid producers, has scheduled a special conference in the nation's capital for next Tuesday (Feb. 15). Prime topic: possible ways—other than the heretofore-used open-bid basis method—to dispose of the Kankakee Ordnance Works' spent sulfuric.

SELECTED CHEMICAL MARKET PRICE CHANGES—Week Ending February 7, 1955

UP

	Change	New Price		Change	New Price
Cresylic, acid, petroleum, dom. 200° to 222° C., tanks, Wilmington, Calif., gal.	$ .04	$ .62	Copper hydrate, dms., c.l., frt., alld. E. of Miss.	.03	.4325
Copper carbonate, 55%, bgs., works	.0017	.28	" sulfate, cryst., 99%, bgs., c.l., works	.01	.1125
" chloride, anhyd., bbls., works	.015	.415	Tin, metal (Straits)	.03	.91

All prices per pound unless quantity is stated.

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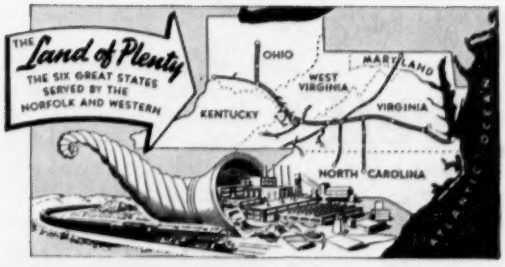

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THESE MAJOR PRODUCERS	CAN PRODUCE THESE AMOUNTS* (in millions of lbs. annually)
Godfrey L. Cabot, Inc.	450
Columbian Carbon Co.	445
United Carbon Co.	430
Phillips Chemical Co.	290
Witco Chemical Co. (sales outlet for Barnhart Hydrocarbon Corp., Continental Blacks, Inc., and Continental Carbon Co.)	275
J. M. Huber Corp.	230
Thermatonic Carbon Co.	95
Sid Richardson Carbon Co.	80

* Includes idle capacity and capacity under construction.

Black Backtracks

New producing facilities will this year boost over-all U.S. carbon black capacity by at least 80 million lbs. to register a near-2.3-billion-lb./year potential.

Significant: the surge toward use of oil-derived furnace blacks in tire tread because of superior abrasion-resisting qualities.

The pell-mell rush in furnace carbon black—both in use and production—is over. Production is down, and most plant construction planned during the last couple of years is about complete.

Newest facilities, due onstream early this fall, are two petrochemical black units at Columbian Carbon's North Bend, La., plant, which will push the company's potential there from 20 million lbs./year to an imposing 60-million-lb. level.

The Columbian installations will turn out oil furnace blacks, but another company will soon remove wraps from a now-secret natural-gas furnace black plant estimated to have a near-40-million-lb. potential turnout.

These new units for carbon black will hoist U.S. capacity to a staggering 2.3 billion lbs./year; that, of course, includes idle and abuilding construction (*see table above*).

At the same time the march toward increasing oil consumption and rising prices of natural gas have taken a toll of several gas-using carbon black plants. Some of this capacity bears an idle label; some has been dismantled. For example, Godfrey L. Cabot has closed down plants at Stinnett and Kingsmill, Tex.; Guymon, Okla., and —most recently—the channel black plant at Hobbs, N.M. In 1953 alone six contact-type (channel process) plants were closed down—four in the Texas Panhandle, one in Louisiana, one in Kansas.

Another would-be producer of natural gas-derived carbon black, Consolidated Carbon Corp. of Illinois, developing the Lynn Furmatic process (*CW, Aug. 14, '54, p. 40*) has yet to turn out commercial quantities. It can operate on a gas-oil mixture containing up to 50% oil, but has test-produced a semireinforcing furnace-(SRF) resembling black, though the resultant product is reportedly somewhat oily.

However, within the furnace black camp, another revolution has been going on. That's the surge in oil usage at the expense of gas. Inching along at 52-53% of the total output in 1951-52, liquid hydrocarbon-based furnace blacks suddenly spurted upward to nearly 60% of total furnace output in 1953.

Reasons for the sudden jump: suitability of the furnace blacks in synthetic rubber compounding, greater operating economies than the contact process, and wider choice in locating oil-consuming furnace black plants vs contact black plants.

During this transition from gas to liquid hydrocarbons and despite the scuttling of a few plants, carbon black production in the U.S. has not slumped, has leveled out over the past few years (*see table*).

Chief sales prop for carbon black is the rubber industry. It regularly takes about 93% of the total output of blacks for increased durability of rubber products. In the past two years, third-place paint usage has sagged. But ink manufacturers have remained second largest buyer of the blacks—soaking up each year 3.8-4.5% of available carbon black.

Of the two major varieties of carbon black, tires and other manufactured rubber goods take about 95% of the furnace type, and at least 90% of the channel or contact black.

The hegemony of the furnace blacks is based chiefly on its popularity with tire makers. The furnace type came to the fore with synthetic rubber products when World War II cut short natural latex supplies.

As the ratio of synthetic to natural rubber rises so do the fortunes of the furnace black makers. For the rest of 1955, a rubber forecaster predicts a stable ratio of 60% synthetic/40%

U. S. Carbon Black Supply
(in billions of lbs.)

	1949	'53	'54 (est.)
Production			
Contact	0.63	0.45	0.38
Furnace	0.60	1.16	1.04
Total	1.23	1.61	1.42
Shipments			
Domestic sales	0.82	1.20	1.10
Exports	0.30	0.36	0.40
Total	1.12	1.56	1.50
Producers' stocks	0.22	0.40	n.a.

natural in transportation rubber products. That compares with a '54 average of 47% natural, and '53's average of 42% natural.

Meanwhile, markets are expanding rapidly for the oil-based high-abrasion furnace (HAF) black and the intermediate superabrasion furnace (ISAF) black (both used in tire treads and recap materials).

The flood of orders for the furnace-type blacks from the rubber industry built up unwieldy inventories of contact (channel) blacks. Result: contact output of 379 million lbs. last year was a steady paring down from the range of 677 to 617 million lbs./year in 1948-51.

In turn, the dwindling demand for channels and popularity of oil-based blacks depressed natural gas consumption to 249 trillion cu. ft. for these products, down 17% from '53's 301 trillion and a drop of 32% from '52's 368 trillion. By comparison, the preliminary '54 total of 172 million gal. of oil turned into blacks, was off only 8% from '53's 187 million. And the latter figure was up 15% above the 1952 usage of 163 million gal.

Whatever the fluctuations in output, the producing areas for carbon black are packed into one corner of the country. Here's the geographic rundown of production in 1953:

	Furnace	Contact
	(millions of lbs.)	
Louisiana	376	—
Total Texas	654	332
Texas Panhandle	387	155
Rest of Texas	267	177
Other states	127	120

A possible future threat to the carbon black market could be the displacement of today's rubber types by polyester elastomers. The latter don't need the black reinforcement, although they may contain it for antiskid properties.

For the next few years, one industry expert expects channel usage to decline to about one-quarter of the carbon black market. The channels will hold those customers who prefer its extreme blackness and dispersion properties—important in ink and paint applications. But for the long term, despite the recent slowing, the oil blacks may capture all but 15% of shipments by 1975.

More Now, More Later

A government decision last week concerning nickel may well be regarded as further confirmation that civilian users have long been hard-pressed for ample supplies. The Office of Defense Mobilization has indicated that an additional 2 million lbs. of the shortage-racked metal will be made available to industry during this month and next.

ODM's Director Arthur Flemming emphasized, however, that none of the added material will come from metal already in the national stockpile. Chances are, though, that much of the nickel to be diverted to industrial channels will have been orignally earmarked for the strategic materials reserve.

Stockpile purchases have continued at a brisk, unabated pace over the past several months, and this has been the prime market-strapping factor.

Other Washington-spurred buying, for military and other defense purposes, has meanwhile tacked from speed-up to slowdown and back again. Earlier this year, before the Formosan situation began crowding the headlines, some nickel trade followers figured that planned cutbacks in the government's take for these latter requirements would make more of the metal available to nonmilitary users. With current conditions, it now becomes a matter of speculation on how far defense buyers are likely to step away from the nickel counter.

Big Bite: It's a cinch that since nickel has slipped into a near-permanent slot on the critically needed list, the U.S. has gone all out to safeguard pipelines to national defense uses.

The U.S. alone is taking more than 65% of the free world's production, with the bulk of it, as can be supposed, consigned to noncivilian outlets. These defense requirements—for jet engines, atomic energy program, stockpile, etc.—last year preempted most of the nickel output from expanding productive facilities—expansions that in '54 jacked world production to nearly 50% over the pre-Korea (1949) level, some 50 million lbs. over '53's turnout.

Nickel output from the free world has bounced along at a rapid clip. Note this pattern of increase since 1951 *(see table, right)*.

Not overly optimistic "guesstimates" peg production this year at about 415 million lbs., and an impressive 500 million by 1960. Ending in 1958, however, the government, via contracts signed in '53, has taken a lien on a sizable chunk of the nickel produced.

For instance, International Nickel (the world's biggest producer, turning out the metal at a 275-million-lbs./year clip), signed a commitment with the Defense Materials Procurement Agency two years ago to deliver 120 million lbs. over a period of five years. (That's in addition to previously signed-for shipments to the U. S. government).

Inco early last year stepped up its monthly production capacity by 2 million lbs. and is now delivering the contracted quantity in 24-million-lbs./year stages.

More for Tomorrow: Eyes-on-the-future Washington planners also moved in with contracts, lined up a number of other expanding nickel producers: Falconbridge Nickel for a reported 11-12 million lbs.; M.A. Hanna (Riddle, Ore.), for approximately 3 million lbs. last year, a like amount in '55, and 13-14 million lbs./year by next year. Add, too, a 10-million-lb. deal with Sherritt Gordon Mines in Canada.

Sherritt Gordon, incidentally, is slated to turn out some 18 million lbs. of nickel this year, a rate, which is indirectly responsible for the funneling of an additional quantity of the short material to this country.

Concentrate from the company's Lynn Lake (Manitoba) mine production, in excess of the amount that could be processed at its Fort Saskatchewan, Alberta, refinery, is being refined by International Nickel. An arrangement between the latter company and the General Services Administration calls for delivery of a minimum of 4.5 mil-

Free-World Nickel Output
(millions of lbs.)

1951		290.0
1952		320.0
1953		340.0
1954	(est.)	390.0

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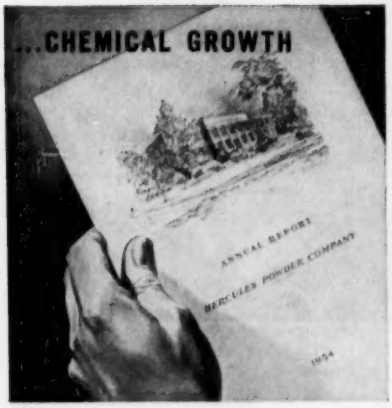

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lion lbs. of refined nickel in the period ending August of this year.

Just the other week Inco made its first shipment – some 45,000 lbs.– under the GSA contract.

And there's more nickel on the way, not immediately, but in sight. At least 2 million lbs./year is scheduled to come from the National Lead-operated Fredericktown, Mo., plant, now trial-running; by next year the government's Nicaro, Cuba, installation–also run by National Lead–will increase its more than 28-million-lb. nickel producing capacity by 75%, up to about 50 million.

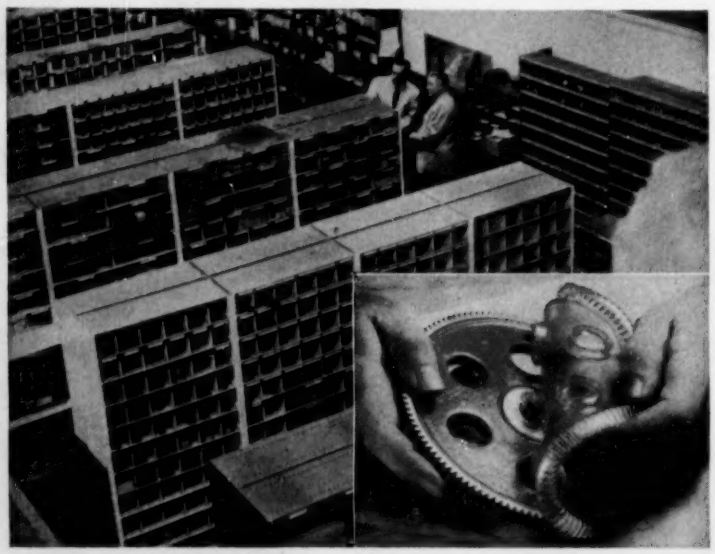
GSA has also indicated that it would put up as much as $6.3 million for a Nicaro Nickel (subsidiary of Freeport Sulfur) pilot plant. Eventual aim of this operation: a plant for 30 million lbs./year of nickel plus 3 million lbs. /year cobalt.

The 2-million-lb. diversion being made right now, though, is of more import to nickel oxides, salts, and plating markets. It should do much toward easing some unhappy situations.

Major salts producers last month, for instance, curtailed deliveries to their customers–another pinch traceable to the metal's scarcity. (Moreover, the little spot-market material available is going at higher bids.)

And earlier, nickel oxides users were handed a substantial price hike, e. g., black and green oxides were advanced by 7¢/lb., to set drum quantity quotes at 76¢ and 75¢/lb., respectively.

But the road ahead looks brighter on a number of counts. Basic nickel prices aren't likely to climb any higher, at least for the next half-year or so. And for the further future, consensus is that the nickel supply–even if the government takes a greater percentage than it does now–should be ample for all U.S. requirements.



Peelable Pickup

BUTYRATE peelable plastic is staging a comeback. Consumption today is inching toward the 1-million-lbs./year mark. That, however, is still far short of the hefty 2 million lbs./year used–in the protection of metal precision parts shipped and stored–by the Armed Services during the Korean War.

Typifying the current broadening civilian outlets (including protective packaging of fine tools, dies, engraving plates–even meats) are the Carrier Corp.'s Master Cribs *(see cut)*, which frequently hold more than a million dollars' worth of tools, many now coated with the butyrate.

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Esterification			✓		✓
Lubes	✓	✓			
Resins			✓	✓	
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RULE BY REGION: Decentralization, say these Schering sales executives,* is a . . .

Cure for Growing Pains

Is localized responsibility and authority under centralized planning and control the cure for "growing pains" in the sales department? At least one sizable pharmaceutical company believes so.

Schering Corp. (Bloomfield, N.J.), has just created 15 new divisions, set up a regional administrative system, and established several hundred market-researching "sales control units" to pioneer for future territories and divisions.

Although an ascendant sales curve is a welcome sight to any chemical management, it's not entirely an unmixed blessing. Mounting sales often bring knotty problems; and in the past 14 years, Schering's annual sales have risen by about 13-fold. In addition, new pharmaceuticals promise to add a fair amount to the company's current $20 million yearly sales.

Centralized management, adequate for their smaller volume of sales, had, professed Domestic Sales Manager Herman Leitzow, run into these problems:

- Command became cumbersome. Field supervisors (now divisional managers) had to clear decisions through the old divisional level; divisional managers, in turn, had to secure home-office approval. This tended to snarl communications, place a heavy incubus on the home office.
- The "grass-roots" knowledge of the field supervisors was not being fully utilized. Generally, these men were not consulted in policy determination and planning.
- Executive development was retarded. With the Bloomfield office making decisions and exercising most of the authority and responsibility, field supervisors were slow to acquire experience in decision making and management-level thinking.
- Supervisors were handling more men than could be effectively directed and the company's salesman turnover was high.
- Market research data was gathered on large, varying areas. When it became necessary to establish smaller areas, accurate marketing data was difficult to derive.

What was the answer to this situation?—one likely to worsen as the company enlarged, unless avertive action was taken. Solution at Schering: decentralize sales management, give divisional managers a good deal more responsibility and authority, but retain control and planning in the home office.

Where practicable, the company has adhered to these basic concepts of decentralized organization:

- Authority and responsibility have been clearly spelled out for the several echelons of sales management.
- Programming and control have been centralized into a separate section.
- Means of control have been instituted to allow smooth functioning of the decentralized divisions.

Using these principles, here is how Schering's revamped sales management functions:

Regional Administration: The three newly appointed regional men (located at the executive offices) are part of the over-all control and planning function.

Regional men convert management decisions into orders for divisional leaders and assign responsibility. They participate with others in the planning section in setting sales goals, programming product introductions, and planning promotion. Too, they offer counsel to divisional men.

Control of the divisional managers is an essential part of the regional managerial function and regional directors measure performance of divisional bosses against a detailed, standardized "effort evaluation." Authority is exercised through meetings and personal contact.

Divisional Direction: As Leitzow terms it, these 15 field-situated managers represent "operational" management. They carry out assignments of the regional directors.

Working under now minutely spelled-out duties, divisional bosses have virtually complete authority and responsibility for selection of detail men (field representatives), indoctrination and explanation of new company policy, gathering trade data, maintaining local customer relations and directing the selling activity of salesmen. (Each manager supervises 10 to 15 men. This, Leitzow asserts, is considered generally an optimum figure.)

Divisional managers now take part in policy, budget, and promotion planning as much as possible (were it feasible, Leitzow "would like to have them all in on this function"). They may object or suggest improvements when assignments are initially received; after that, they're on their own.

* L. to r., Allan Miller, marketing manager; George Straayer, director of sales training and trade relations; Herman Leitzow, domestic sales manager.

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Market Research Units: Concomitant with the sales shuffle, Schering has apportioned the entire country into several hundred "sales control units." Divisional managers study distribution patterns for each unit, collect data on population, consumer income, trends, and prepare estimates of the drug market. This provides information for charting future action, determining sales objectives, territory comparison, other sales functions.

As conditions warrant, units may be merged to form territories or new divisions. Previously, marketing facts were assembled for the larger, territorial area; and as one result, it was difficult to pick out the most productive areas in a given territory.

The program, only a few weeks old, is simply too new to boast measurable results. But if decentralization works out as Schering hopes it will, the company should count these gains:

- Faster, more effective communications. Many questions will be resolved without clearance through higher administration.
- Improved motivation and morale. With more responsibility, managers will have more incentive to perform; with a voice in planning, managers will feel themselves "part of the team." A drop in salesman turnover should be one result of the increased incentive.
- Improved executive training. Making decisions constantly and sharing in planning, managers will acquire management training, become accustomed to heavier responsibility.
- More useful marketing data. Information on the small "sales control units" can be readily combined for future sales developments.

Leitzow forecasts that the sum total of all the benefits will be "more sales." "But," he adds, "whether or not decentralization will do it, only time, work, and thought will tell. I think it will."

•

Sales Moves: D. H. Litter Co. (New York and Boston) has been appointed exclusive sales representative to the paint and allied industries for Central Soya Co.'s lecithin products.

- W. S. Shamban & Co. (Culver City, Calif.) is a new distributor for Du Pont's Teflon-coated glass fabrics.
- Charles Albert Smith Ltd. (Toronto) is expanding its representation of Emulsol Chemical Corp. products. The company will now handle the sale and distribution of Emulsol's surface active agents for food, cosmetic, industrial and agricultural use over the entire Dominion of Canada.
- R. M. Hollingshead Corp. has established a new regional sales office in New York. Focal point for all sales in New York state and parts of New England, the office will be headquarters for the corporation's Eastern Division.

•

Ammonia Affiliate: Chemco of Iowa, agricultural fertilizer concern with 12 affiliate companies in western Iowa, has joined Chemical Enterprises, Inc. (*CW, Oct. 9, '54 p. 98*).

Chemco, with 21 distribution points, last year serviced 175,000 acres with anhydrous ammonia. Its 0.5-million-gal. storage capacity is to be boosted 50% this year.

The Chemical Enterprises acquisition, which was effected through an exchange of stock, raises to approximately 300 the number of distribution points now covered by the parent company and/or its affiliates.

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DELAWARE IN THE SPOTLIGHT: It's a landmark on Pennsalt's map of . . .

Decentralizing for Streamlining

When Pennsylvania Salt's trim new Chicago Heights, Ill., plant went on-stream last Thursday, it marked another milestone in Pennsalt's current drive for a bigger slice in the cleaning and allied specialties market.

Chronologically the second, the Chicago Heights operation is one of three links declared so far in the company's new distribution network. The others:

- A just-dedicated similar unit at Delaware, O. *(see cut).*
- A being-adapted existing plant at Cornwells Heights, Pa.

By no means the ultimate limits of Pennsalt's realignment, these three plants stand as tangible implementations of a two-year reshuffle to strengthen an admittedly weak marketing hand in the specialties business.

Before: The Chicago Heights opening dates back to 1952. At that time when President George Beitzel reviewed his company's operations, he was especially disturbed by the state of his chemical specialties sales. The picture: despite a tripled sales figure over a several-year period, earnings, in terms of per cent of sales, were lagging.

Tossing the problem at his staff, Beitzel asked for recommendations for bolstering the specialty line.

After: One of the big switches resulting from Beitzel's checkup was the organizational realignment, which became effective last April:

- With the old Pennsalt line-up, manufacturing and sales divisions shared earnings responsibilities while serving in their functional areas in both industrial and specialties fields.
- Under the revised structure, the industrial (run by William Drake) and specialties (headed by Albert Clem) divisions were made independent entities in the parent organization. Objectives: to provide greater incentive and more operating efficiency in sales and manufacturing.

The second major conclusion from Beitzel's investigation: better returns on specialty sales would require specially tailored facilities for their development.

Pennsalt's answer is the set of strategically decentralized units of which Chicago Heights is the latest example. In operation, these plants serve as primary regional blending, packaging, warehousing and distribution centers. Products handled include cleansing and sanitizing agents; laundry and dry cleaners; metal cleaners, coatings and special lubricants; and maintenance chemicals.

Prime considerations in establishing the plants:

- Reduction of production and freight costs.
- Improvement of customer service.

New Deal: In the past, Pennsalt had been content to let its chemical specialties play second fiddle to its

heavy chemical interests; specialties had been regarded as an expedient for the development of captive industrial chemicals markets.

Now, for the first time in Pennsalt's 104-year history, the specialties division is enjoying a free hand plus its own tools. Beyond doubt, the company is expecting Al Clem and staff to carve out a considerable sales niche.

•

For Your Reference: Sodium nitrite for corrosion prevention is the subject of a new booklet on the use of this product for the protection of metal surfaces. Commercial applications, testing, handling methods and bibliography are included. Solvay Process Division, Allied Chemical & Dye Corp., New York.

• Chlorothene (Dow's inhibited 1,1,1-trichloroethane) is described in a now-available pamphlet. Aimed at cold-, dip-, and bucket-cleaning users, the booklet covers physical specifications and properties, toxicity factors. Solvent Sales Dept., Dow Chemical Co., Midland, Mich.

• Feed supplement facts for formulators, a newly revised set of seven data sheets on the use of methionine, niacin, vitamin B-12 supplements, calcium pantothenate, riboflavin and choline chloride in animal nutrition, is obtainable on request. Animal Nutrition Dept., U. S. Industrial Chemicals Co., New York.

• Growing significance of graphite in electrometallurgy and electrochemistry is discussed in "Engineered Performance," a brochure on the use of synthetic graphite as a process material. Electrode Division, Great Lakes Carbon Corp., New York.

Chicago Stock: Phelps Dodge Refining Corp. (New York) has opened a warehouse, its third shipping point, in Chicago. Serving also as sales office, the new spot will stock all grades of copper sulfate and nickel sulfate.

•

New Sources: Copper cyanide is now being produced and offered in large-scale commercial quantities by Copper Pigment and Chemical Works, Inc. (Elizabeth, N.J.). The company claims to be the second current U.S. supplier of this material.

• Emulsifiable-type polyethylene in limited quantities can now be obtained for evaluation on plant-run scale. The supplier, Semet-Solvay Petrochemical Division, Allied Chemical & Dye Corp., (New York) foresees applications in polishes and other protective coatings.

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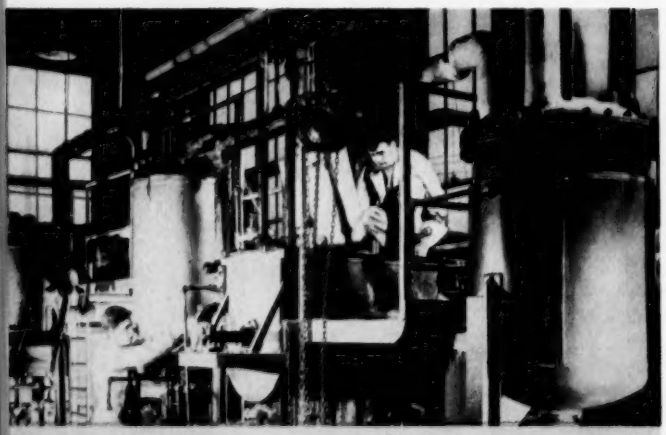

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